

STAFFORD COUNTY CHESAPEAKE BAY BOARD
NOVEMBER 18, 2024, MEETING PACKAGE

ROLL CALL



STAFFORD COUNTY CHESAPEAKE BAY BOARD

Roll Call

Monday, November 18, 2024 at 6:00 pm
Board Chambers of the George L. Gordon, Jr. Government
Center

CTO: _____ p.m.

<u>Members:</u>	Present	Absent
Sue Henderson	_____	_____
Mary Rust	_____	_____
Benjamin Rudasill	_____	_____
Anthony Pineau	_____	_____
Dan Adams	_____	_____
Robert Hayden	_____	_____
Zachary Harrison	_____	_____

<u>Staff:</u>	Present
Joe Fiorello	_____
Emily Torrey	_____
_____	_____
_____	_____
_____	_____
_____	_____

Adjourn: _____ p.m.

AGENDA



STAFFORD COUNTY CHESAPEAKE BAY BOARD

Agenda

Monday, November 18, 2024, at 6:00 pm
Board Chambers of the George L. Gordon, Jr. Government Center

- A. Call to Order
- B. Roll Call of Members
- C. Determination of a Quorum
- D. Approval of Meeting Minutes – June 17, 2024
- E. New Business

Public Hearing: AP24155970 – A Chesapeake Bay Special Exception Application (Resolution CBB24-05) for Mr. Victor Mbulu, applicant, requesting a special exception under Sec. 27B-14 of the Stafford County Chesapeake Bay Preservation Area Ordinance (Chapter 27B) from the requirements of Sec. 27B-7 "Development Conditions" to construct "to construct an access aisle to the proposed tractor-trailor repair garage within a portion of the Chesapeake Bay Resource Protection Area (CRPA) buffer located along Claiborne Run on Tax Map Parcel 54-68B.

- F. Old Business

None

- G. Chairman's Report

None

- H. Staff Report

None

- I. Adjournment

CHESAPEAKE BAY BOARD
JUNE 17, 2024, DRAFT MEETING MINUTES



STAFFORD COUNTY CHESAPEAKE BAY BOARD

Meeting Minutes

Monday, June 17, 2024 at 6:00 pm

Board Chambers of the George L. Gordon, Jr. Government Center

A. Call to Order

The meeting was called to order at 6:02 p.m. by Ms. Henderson

B. Roll Call

Members Present: Sue Henderson (Chair), Mary Rust (Vice-Chair), Anthony Pineau, Dan Adams, Robert Hayden

Members Absent: Ben Rudasill, Zachary Martinez

Staff Present: Joe Fiorello, Emily Torrey

C. Determination of a Quorum

A quorum was established with 5 of the 7 members present.

D. Approval of Meeting Minutes

Robert Hayden made a motion to approve the January 22, 2024 Chesapeake Bay Board Minutes. Mary Rust seconded. The motion was unanimously approved.

E. New Business

Public Hearing: AP24155700 – A Chesapeake Bay Special Exception Application (Resolution CBB24-03) for Mr. David Lynch, applicant, requesting a special exception under Sec. 27B-14 of the Stafford County Chesapeake Bay Preservation Area Ordinance (Chapter 27B) from the requirements of Sec. 27B-7 "Development Conditions" in order to construct three retaining walls within a portion of the Chesapeake Bay Resource Protection Area (CRPA) buffer located along Aquia Creek on Tax Map Parcel 40-59.

Mr. Fiorello reviewed the criteria for deciding whether to grant, grant in modification form or deny a special exception application. CBB24-03 application 24155700 is for retaining walls. The request will impact 11,740 square feet of RPA for the construction of three-tiered retaining walls. That 11,740 square feet, besides containing the three retaining walls will also contain re-vegetation and as well as some of it will spill over into the remainder of the property. The tax map parcel is 40-29 and it's in the Griffiths-Widewater election district. The property is zoned A1 and was platted prior to the adoption of the Chesapeake Bay Act ordinances. It contains a single-family residence structure, a partial bulkhead



and a pier. Based on aerial photographs, the house was built sometime between 1937 and 1954 and is readily visible in the 1983 aerial photograph of the area. The pier shows up in the 1954 aerial photograph of the area and was replaced in 2015 under wetlands permit application VMRC20150496. The 2015 wetland permit application for the replacement of the pier showed the bulkhead was in existence at that time. The 2022 aerial shows the majority of the CRPA to be void of woody vegetation. The proposed grading, construction of three retaining walls and replanting within the RPA of the property will involve disturbing 11,740 square feet of seaward, 50 feet of the CRPA located on site. Replanting will also occur in some areas of the property that are located outside of the CRPA as mitigation for the void of vegetation within the landward 50 feet portion of the CRPA originally used for the residential structure and a small backyard. This is a normal practice to accommodate the residential structure on a pre-Chesapeake Bay lot while still providing vegetation mitigation over the entire property. The planting plan was designed with the use of the Riparian Buffers Modification and Mitigation Guidance Manual and proposes 30 canopy trees, 60 understory trees and 90 shrubs. Mr. Lynch is requesting the Board consider the mitigation described above as compensation for the loss of .27 acres of RPA due to the proposed grading, installation of the 3 retaining walls and replanting of the disturbed portion of the RPA. 2 of the retaining walls will be 3 feet in height and 1 will be approximately 2.5 feet.

The Board is only hearing the Chesapeake Bay portion of the project which entails restoring/fixing the bulkhead, which is completely within VMRC jurisdiction. The living shoreline is within VMRC's jurisdiction, Corps of Engineers' jurisdiction, the Board's jurisdiction and VIMS. We have not heard back from VIMS or VMRC as to their decision on the living shoreline. The Board Chairman for the Wetland can sign off on the Wetlands portion of the application if they deem the application is sufficiently complete to allow evaluation, the project satisfactorily meets the general permit criteria, the adjoining property owners to the proposed project have been notified and express no opposition to the project and the general permit process is appropriate to the use of the specific project. Staff has found the criteria has been met but it is ultimately up to the Wetlands' Board Chair to sign off or to wait until VMRC and VIMS come up with a ruling.

Ms. Henderson asked for clarification on the staff report. The report says "requires the Wetlands Board and the VMRC to review the application concurrently" but Mr. Fiorello stated that it "requires the Wetlands Board **Chair** and VMRC to review". Mr. Beck reviewed a copy of the code for living shorelines and it states it "requires the Wetlands Board Chair".

Mr. Beck, the project engineer, stated they are trying to build up the steep slope and there are some signs of general failure in the slope. Juniper plants had been planted along the slope but it is basically bare. The retaining walls are 12 inches wide and extend roughly 300 feet along the front of the property. A geotechnical engineer has been hired to assist on the project. Native vegetation will be planted in accordance with the RPA manual to mitigate the RPA disturbance. The new home being built on the property will be an expansion of the existing home and the new part will occur outside the



RPA so there will be no other additional impact.

Mr. Pineau wondered if the living shoreline were to fail would the Board be involved. Mr. Beck confirmed that the living shoreline is a VMRC project and the Board would not be involved.

Mary Rust made a motion to accept CBB24-03. Anthony Pineau seconded the motion. Motion passed 5/0.

Ms. Henderson would like a chance to look over the paperwork before making a ruling on the four items with the wetlands permit.

F. Old Business

1. Community outreach/website

Ms. Henderson asked for the status of the community outreach website. Emily Torrey reported there have been no changes since the last meeting. Ms. Henderson asked that each member reach out to their Supervisor to set the priorities for this department.

Mr. Hayden suggested an event in coordination with the State Park to advertise the Board. Ms. Henderson is not opposed to this but it would require community outreach and a user-friendly website available to the average homeowner who owns property on the water. Ms. Torrey clarified that there is a shoreline property owner webpage and a rack card has been created. Ms. Henderson requested the rack card be distributed to all the Board members.

2. Available funds/account balances of the wetlands and Chesapeake Bay in-lieu-fees

No forward motion has been made on determining how the funds can be used. It is unclear if the money can be utilized strictly for mitigation or if it can be used in other aspects. Ms. Torrey said the money can only be used for tidal wetlands projects. The only areas owned by the County with tidal wetlands is Duff Park, Aquia Landing and Crows Nest. Ms. Henderson would like to use the funds for education or community outreach. Mr. Fiorello said he has always been told it could only be used for mitigation of title wetlands on County property. Ms. Torrey stated that Ordinance 7-73, Section 27-35 says the in-lieu fees shall be used for Title wetland creation or restoration projects in the locality or for the purchase of credits in an approved compensatory title mitigation bank. Ms. Rust suggested they could approach the BOS and ask for an exemption. The State code will need to be checked to see if this is allowed. Mr. Hayden offered to reach out to the County Attorney and Commissioner of Revenue with questions.

Ms. Henderson suggested they ask the Director of Parks and Rec again if there are any projects at Duff Park, Aquia Landing or Crows Nest that they could use the money for.



G. Chairman's Report

None

H. Staff Report

Ms. Henderson asked for the number of applications that have been submitted for the year. Mr. Fiorello will email that information to the Board members. Ms. Henderson asked that he have those numbers every time the Board meets.

I. Adjournment

With no further business to discuss, Mr. Pineau made a motion to adjourn. The motion was seconded by Ms. Rust. The Chesapeake Bay Board meeting adjourned at 6:56

NEW BUISNESS:
VICTOR MBULU TRANSPORT COMPANY
SPECIAL EXCEPTION APPLICATION



STAFFORD COUNTY
DEPARTMENT OF PLANNING AND ZONING

1300 Courthouse Road, Stafford VA 22554

Phone: 540-658-8668 Fax: 540-658-6824

www.staffordcountyva.gov

**CHESAPEAKE BAY BOARD
SPECIAL EXCEPTION
APPLICATION PACKET**

- The following items are included within this packet:
 1. Pre-Application Conference Sheet
 2. Chesapeake Bay Board Application Question and Answers
 3. Stafford County Code Section 27B-14
 4. Application
 5. Owners Consent Form
 6. Water Quality Impact Assessment Form & Stafford County Code Section 27B-10
- Please be advised that applicants are required to schedule a pre-application meeting with the Environmental Planning staff prior to submitting their application. The applicant would then need to schedule a second meeting to officially submit their application. ***Failure to comply with the application requirements, including providing all of the required information, may result in the matter being delayed until such time as all requirements have been fulfilled.*** Appointments may be scheduled by calling the office of Planning and Zoning at 540-658-8668.
- If an application is withdrawn prior to the first public hearing, fifty (50) percent of the amount of the application fee may be refunded to the applicant.

Fees are as follows: ***Individual Residential \$600.00 per Special exception***
Other \$1,375.00 per Special exception

A 2.75% technology fee will be assessed and collected on the total fees.
- The Chesapeake Bay Board meets the third Monday of every month. Due to required public notice, complete applications must be received by the third Monday one month prior to the scheduled meeting.



STAFFORD COUNTY
DEPARTMENT OF PLANNING AND ZONING

1300 Courthouse Road, Stafford VA 22554

Phone: 540-658-8668 Fax: 540-658-6824

www.staffordcountyva.gov

Pre-Application Conference – Checklist (to be completed by staff)

Pre-application conference date:

Owner and/or applicant: **Victor Mbulu Transport Company**

Application for: ***Special Exception*** COMMERCIAL ☐ RESIDENTIAL ☐

The following information must be submitted with the completed application and fee:

Completed Application

Owner's Consent form (*Provide if applicant is not the owner of the property.*)

Site Plans(including wetlands and CRPA buffer)

A Major Water Quality Impact Assessment

Other:

Applications must be completed and returned no later than _____ in order to be heard at the meeting scheduled for _____. **Meetings are held at 7:00 p.m. in the Board of Supervisor's Chambers and you or a representative must be present.**

NOTE: This form must be submitted with the completed application, affidavit, all of the above and fee of \$_____.

Staff Member Signature



STAFFORD COUNTY
DEPARTMENT OF PLANNING AND ZONING

CBB SPECIAL EXCEPTION APPLICATION

1. **What is a special exception?** – A reasonable deviation from those provisions in the Chesapeake Bay Protection Area (CBPA) ordinance in cases where a development proposal cannot meet the regulatory requirements due to a unique set of circumstances and conditions. Such a need for a special exception would not be shared generally by other properties, and provided such special exception is not contrary to the intended spirit and purpose of Chapter 27B.
2. **Who can grant a special exception to the Chesapeake Bay Protection Area (CBPA) ordinance?** – The Chesapeake Bay Board has the authority to grant special exceptions in cases where strict application of the CBPA Ordinance would result in unnecessary hardship for the property owner.
3. **What is the Chesapeake Bay Board** – The CBB is a five-member board comprised of the Wetlands Board. The Wetlands Board/CBB members are at-large County residents appointed by the Board of Supervisors. The CBB will hear and consider requests for special exceptions to the Stafford County CBPA Ordinance.
4. **What is the basis for a special exception to the CBPA ordinance?** – The CBB must make the following five findings in order to approve a request for a special exception, as set forth in Section 27B-14(d):
 - Granting the special exception will not confer upon the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
 - The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or non-conforming that are related to adjacent parcels;
 - The special exception request is the minimum necessary to afford relief;
 - The special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
 - Reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.
5. **What is a water quality impact assessment?** The exception process is intended to identify the minimum relief necessary to permit the proposed use. To assist in this determination, a Water Quality Impact Assessment (WQIA) which meets the requirements found in Section 27B-10 is to be used in evaluating the site of the proposed exception, the potential effects of the exception, and for identifying mitigation measures that are appropriate to counteract those effects.

6. **What is the application process?** – Special exception applications must be filed with the Department of Planning and Zoning.
- A pre-application conference is held between the applicant and a staff member from the Planning and Zoning Department. A solution may be discovered without the need for a special exception.
 - A complete special exception application with original signatures, all associated materials and the application fee by the established deadline.
 - The Department of Planning and Zoning will advertise the special exception request as a notice of public hearing once a week for two consecutive weeks prior to the hearing date in the local newspaper. The notice will specify the date, time and place of the hearing so persons affected may appear and present their views. In addition, the Planning and Zoning Department will notify adjacent property owners of the requested special exception and hearing date.
 - A member of the Planning and Zoning Department will prepare a staff report that will accompany the special exception application and both will be forwarded to the members of the CBB for their review before the meeting date.
 - At the public hearing the CBB will approve, deny or defer the special exception request until a later date after hearing the applicant and all interested parties.
7. **How long does a typical special exception process take?** – The average special exception process is approximately four weeks from submission of a complete application to action.
8. **What if I want to appeal the decision of the CBB?** – Any one aggrieved by a decision of the CBB has thirty (30) days to appeal the decision to the Stafford County Board of Supervisors.



CHESAPEAKE BAY PRESERVATION AREA ORDINANCE

Sec. 27B-14. - Special exceptions.

- (a) The board shall be comprised of all of the members of the county's wetlands board.
- (b) A request for a special exception to the requirements of [section 27B-7](#) and subsection [27B-8\(b\)](#) of this chapter shall be made in writing to the board. The request shall identify the impacts of the proposed exception on water quality and on lands within the CRPA through the performance of a water quality impact assessment which complies with the provisions of [section 27B-10](#) of this chapter.
- (c) No later than sixty (60) days after receipt of a complete special exception request, the board shall hold a public hearing on the request. The board shall hold a public hearing in accordance with Code of Virginia § 15.2-2204, except that only one hearing shall be required. The board shall cause notice of the hearing to be published at least once a week for two (2) weeks prior to such hearing in a newspaper of general circulation in this county. When giving any notice to the owner(s), their agent(s), or the occupant(s) of abutting property and property immediately across the street or road from the property affected, the notice shall be given by first-class mail to the last known address as shown on the current real estate tax assessment book or records. The board shall mail these notices not less than twenty (20) days prior to the date set for the hearing.
- (d) The board shall review the request for a special exception and the water quality impact assessment. The board may grant the special exception, with such conditions and safeguards as deemed necessary to further the purpose and intent of this chapter, if the board finds:
 - (1) Granting the special exception will not confer upon the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
 - (2) The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;
 - (3) The special exception request is the minimum necessary to afford relief;
 - (4) The special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
 - (5) Reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.
- (e) The board shall make its determination within thirty (30) days of the public hearing. If the board fails to act within that time, the application shall be deemed approved.
- (f) If the board denies the special exception, the board shall provide the applicant(s) with the board's written decision, including its rationale.

STAFFORD COUNTY
Department of Planning and Zoning



CHESAPEAKE BAY BOARD
SPECIAL EXCEPTION APPLICATION

RECEIVED BUT NOT OFFICIALLY SUBMITTED
DATE: _____ INITIALS _____

OFFICIALLY SUBMITTED

DATE: _____ INITIALS _____

TYPE OF APPLICATION

INDIVIDUAL RESIDENTIAL ☐ **OTHER** ☐

APPLICATION NUMBER _____

APPLICANT INFORMATION

Victor Mbulu Transport Company

NAME

16408 Plumage Eagle St

STREET ADDRESS

Woodbridge

VA

22191

CITY

STATE

ZIP

PHONE

CELL

FAX

victormbulu@gmail.com

EMAIL

OWNER INFORMATION (If different from the Applicant)

Victor Mbulu Transport Company

NAME

16408 Plumage Eagle St

Woodbridge

VA

22191

ADDRESS

CITY

STATE

ZIP

PHONE NUMBER

CELL

FAX NUMBER

victormbulu@gmail.com

EMAIL ADDRESS

PROPERTY INFORMATION

54-68B

4.858 ac

TAX MAP

SECTION

PARCEL/LOT#

LOT SIZE

n/a

M-1

SUBDIVISION

ZONING DISTRICT

Vacant

Truck Repair and Fleet Parking

EXISTING USE

PROPOSED USE

Business and Industry

George Washington

COMPREHENSIVE PLAN DESIGNATION

MAGISTERIAL DISTRICT

FOR OFFICE USE ONLY

APPLICATION APPROVED BY _____

DATE _____

RESOLUTION # _____

APPLICATION # _____

FEES PAID:

☐ YES

☐ NO

GENERAL INFORMATION

- ❖ What code section of the Chesapeake Bay Protection Area ordinance is the applicant seeking relief from as a result of a special exception?

Chapter 27B, Section 8.b.5.b which pertains to loss of buildable area

- ❖ Are there any special zoning conditions applicable to the property (including a conditional use permit, special exception, variance, development proffers, vesting determination)? ☐ Yes ☒ No

If yes, please specify _____

- ❖ Is the subject property located within a flood district? ☒ Yes ☐ No

If yes, please specify which one Floodway

- ❖ County Water & Sewer? ☒ Private Well & Septic? ☐

SPECIAL EXCEPTION JUSTIFICATION

Please provide a statement of justification for the requested special exception. Be aware that the Board must make the following five findings in order to approve a request for a special exception, as set forth in Section 27B-14(d):

- (1) Granting the special exception will not confer upon the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
- (2) The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;
- (3) The special exception request is the minimum necessary to afford relief;
- (4) The special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
- (5) Reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.

[illegible]

Owner's Consent Form

I/We, the Owner(s) of the property listed below, hereby grant permission for the Applicant, Victor Mbulu Transport Company to seek a Special Exemption as requested in the Chesapeake Bay Board application relating to property located at Cool Springs Road Tm#: 54-68B On Assessor's Parcel's 54-68B

10/22/24
Date

[Signature]
Signature

VICTOR MBULU
Printed Name

~Notary~

SUBSCRIBED & SWORN TO Before me this 22nd day of October, 2024



Courtney B. Howard
Notary Public

My Commission Expires: 5/31/2028



STAFFORD COUNTY

DEPARTMENT OF PLANNING AND ZONING

WATER QUALITY IMPACT ASSESSMENT

A scaled site drawing, which shows the following, must be attached to this water quality impact assessment:

1. Location of the components of the RPA, including the 100-foot buffer area;
2. Location and nature of any proposed encroachment into the buffer area, including, type of paving material; areas of clearing or grading; location of any structures, drives, or other impervious cover; sewage disposal systems or reserve drainfield sites; and wells.
3. Type and location of proposed best management practices to mitigate the proposed encroachment;
4. Location of existing vegetation onsite, including the number, type of trees, caliper and other vegetation to be removed in the buffer to accommodate the encroachment or modification; and
5. Type, size, and location of replacement vegetation.

Site Conditions (of site and adjacent lands):

Existing Topography: 70' - 42' above sea level Hydrology: The whole site drains towards Claiborne Run
Soils Map Unit/Name: Cn (Conagree loam) & Ad (Alluvial) % Slope: 0.8 - 41 Geology: _____
Fill Material (source and composition): n/a
Total Amount of Disturbed Area (ft²): .79 acres Total Amount of Cleared Area(ft²): .79 acres
Estimation of Pre and Post Development Pollutant Loads: The post-development condition yields a negative pollutant load
Other _____

Existing Vegetation:

Total Underbrush / Grass Removed (ft²): _____ Types: _____
Number of Healthy Trees Removed: _____ Types: _____
Number of Trees Limbed or Pruned: _____ Types: _____
Number of Dead/Dying/Diseased Trees Removed: _____ Types: _____
Other: _____

Proposed Landscaping / Vegetation Mitigation Measures (App. D, CBLAD Buffer Modification Manual)

Number of New Canopy Trees Proposed: _____ Types: _____
Number of New Understory Trees Proposed: _____ Types: _____
Number of New Shrubs Proposed: _____ Types: _____
Other: 3.72 acres existing forest on the property is being placed into a conservation easement

Proposed Erosion and Sedimentation Control Practices:

- ☒ Silt Fencing ☒ Temporary Construction Entrance ☒ Straw Bale Barrier(s)
☒ Inlet Protection ☒ Temporary/Permanent Seeding Mulching
☒ Tree Protection Sediment Trap
☒ Other: Temporary Vehicular Stream Crossing

Proposed Best Management Practices:

- ☐ Dry Well(s) ☐ Infiltration Trench(es) ☐ Vegetated Filter Strip(s) ☐ Grass Swale(s)
Other: _____

BMP design dimensions: _____

Wastewater (Septic) Element (if needed):

Attach legible, clean copy of Health Department Approval Information- to include calculations and dimensions.

Description of potential impacts of the proposed wastewater systems including any proposed mitigation measures for the impacts:

n/a



CHESAPEAKE BAY PRESERVATION AREA ORDINANCE

Sec. 27B-10. - Water quality impact assessment.

- (a) Purpose and intent. The purpose of the water quality impact assessment is to:
 - (1) Identify the impacts of proposed land disturbance, development, or redevelopment on water quality and lands within the county;
 - (2) Provide for administrative relief from the terms of this chapter when warranted and in accordance with the requirements contained herein; and
 - (3) Specify mitigation which will address water quality protection.
- (b) When required. A water quality impact assessment is required for:
 - (1) Any proposed land disturbance, development, or redevelopment within a CRPA, including any buffer area encroachment;
 - (2) Any land disturbance, development, or redevelopment in a LRMA as deemed necessary by the administrator due to the unique characteristics of the site or intensity of the proposed development. When requested by the applicant proposing to construct a single-family residence in the CRPA, the administrator shall perform a water quality impact assessment;
 - (3) The water quality impact assessment shall not be required prior to submission of a site plan or application for a single-family residence building permit; and
 - (4) There shall be two (2) levels of water quality impact assessments: a minor assessment and a major assessment.
- (c) Minor water quality impact assessment. A minor water quality impact assessment pertains only to land disturbance, development or redevelopment within CRPAs which causes no more than five thousand (5,000) square feet of land disturbance and requires any encroachment into the landward fifty (50) feet of the one hundred-foot buffer area. A minor assessment must demonstrate through acceptable calculations that the remaining buffer and necessary BMPs will result in removal of no less than seventy-five (75) percent of sediments and forty (40) percent of nutrients from post-development stormwater runoff. A minor assessment shall include a site drawing to scale which shows the following:
 - (1) Location of the components of the CRPA, including the one hundred-foot buffer area;
 - (2) Location and nature of the proposed encroachment into the buffer area, including: type of paving material; areas of clearing or grading; location of any structures, drives, or other impervious cover; and sewage disposal systems or reserve drain field sites;
 - (3) Type and location of proposed BMPs to mitigate the proposed encroachment;
 - (4) Location of existing on-site vegetation, including the number and type of trees and other vegetation to be removed in the buffer area to accommodate the encroachment or modification; and

- (5) A re-vegetation plan that supplements the existing buffer area vegetation in a manner that provides for pollutant removal, erosion and runoff control.
- (d) Major water quality impact assessment. A major water quality impact assessment shall be required for any land disturbance, development or redevelopment which exceeds five thousand (5,000) square feet of land disturbance within CRPAs and requires any encroachment into the landward fifty (50) feet of the one hundred-foot buffer area, or disturbs any portion of the seaward fifty (50) feet of the one hundred-foot buffer area or any other components of an CRPA, or is located in an LRMA and is deemed necessary by the administrator. The information required in this section shall be considered a minimum, unless the administrator determines that some of the elements are unnecessary due to the scope and nature of the proposed use and development of land.

A water quality impact assessment shall not be required for commercial or industrial uses that disturb less than twenty thousand (20,000) square feet of land or individual single-family lots, located within the LRMA and outside the CRPA. The following elements shall be included in the preparation and submission of a major water quality assessment:

- (1) All of the information required in a minor water quality impact statement, as specified in subsection 27B-10(c) of this chapter;
- (2) A hydrogeological element which shall:
 - a. Describe the existing topography, soils, hydrology, and geology of the site and adjacent lands;
 - b. Describe the impacts of the proposed development on topography, soils, hydrology and geology on the site and adjacent lands; and
 - c. Indicate the following:
 1. Disturbance or destruction of wetlands in CRPAs and justification for such action;
 2. Disruptions or reductions in the supply of water to wetlands, streams, lakes, rivers, or other water bodies;
 3. Disruptions to existing hydrology, including wetland and stream circulation patterns;
 4. Description of proposed fill material;
 5. Location of dredge material and location of dumping area for such material;
 6. Estimation of pre-development and post-development pollutant loads in runoff;
 7. Estimation of percent increase in impervious surface on-site and types of surfacing materials used;
 8. Percent of the site to be cleared for the project;
 9. Anticipated duration and phasing schedule of construction project;
 10. List of all requisite permits from all applicable agencies necessary to develop project; and
 11. Descriptions of the proposed mitigation measures for the potential hydrogeological impacts. Potential mitigation measures may include, but are not limited to:
 - (i) Proposed erosion and sediment control concepts. Concepts may include minimizing the extent of the cleared area, perimeter controls, reduction of runoff velocities, measures to stabilize disturbed areas, and schedule and personnel for site inspection;
 - (ii) Proposed stormwater management system; and
 - (iii) Minimizing excavation and fill.
- (3) A landscape element for areas within CBPAs that:

- a. Identifies the general location of all significant onsite plant material. Where there are groups of trees, stands may be outlined;
- b. Describes the impacts the development or use will have on the existing vegetation. Information shall include:
 - 1. General limits of any clearing, based on all anticipated improvements including buildings, drives and utilities;
 - 2. Clear delineation of all trees which will be removed; and
 - 3. General description of any plant material to be disturbed or removed.
- c. Describes the potential measures for mitigation. Possible mitigation measures may include, but are not limited to:
 - 1. Replanting schedule for vegetation removed for construction, including a list of possible planting materials to be used;
 - 2. Demonstration that the design of the plan will preserve any significant vegetation on the site to the greatest extent possible; and
 - 3. Demonstration that indigenous plants are to be used to the greatest extent possible.

(4) A wastewater element, where applicable, that:

- a. Includes calculations and locations of anticipated drainfield or wastewater irrigation areas;
- b. Provides justification for sewer line locations in CBPAs, where applicable, and describes construction techniques and standards;
- c. Addresses any proposed on-site collection and treatment systems, their treatment levels, and impacts on receiving watercourses; and
- d. Describes the potential impacts of the proposed wastewater systems, including the proposed mitigation measures for these impacts.

(5) Identification of the existing characteristics and conditions of sensitive lands included as components of CRPAs, as defined in this chapter.

(6) A general identification of the natural processes and ecological relationships inherent in the site, and an assessment of the impact of the proposed use and development of land on these processes and relationships.

(e) Submission and review requirements.

- (1) One paper copy and one digital copy of all site drawings and other applicable information as required by subsections (c) and (d) of this section shall be submitted to the administrative authority for review.
- (2) All information required in this section shall be certified as complete and accurate by a professional practicing in his field of competence.
- (3) A major or minor water quality impact assessment shall be prepared and submitted to and reviewed by the administrative authority in conjunction with plan submission.
- (4) As part of any major water quality impact assessment submittal, the administrator may require review by DEQ Water Division-Office of Local Government Programs staff. Upon receipt of a major water quality impact assessment, the administrator will determine if such review is warranted and may request DEQ staff to review the assessment and respond with written comments. Comments by DEQ staff will be incorporated into the final review by the administrator, provided that such comments are provided by DEQ staff within ninety (90) days of the date of the administrator's request.

(f) Evaluation procedure.

- (1) Upon the completed review of a minor water quality impact assessment, the administrator will determine if any proposed modification or reduction to the buffer area is consistent with the provisions of this chapter and make a finding based upon the following criteria:
 - a. The justification for the proposed encroachment and the ability to place improvements elsewhere on the site to avoid disturbance of the buffer area;
 - b. Minimization of impervious surface;
 - c. The extent to which proposed BMPs achieve the requisite reductions in pollutant loadings;
 - d. The extent which the development proposal meets the purpose and intent of this chapter; and
 - e. The cumulative impacts (degradation) on water quality of the proposed development, when considered in relation to other existing and proposed development in the vicinity.
- (2) Upon the completed review of a major water quality impact assessment, the administrator will determine if the proposed development is consistent with the purpose and intent of this chapter and make a finding based upon the following criteria:
 - a. Within any CRPA, the proposed development is water-dependent;
 - b. The disturbance of any wetlands in CRPAs will be minimized;
 - c. The development will not result in significant disruption of the hydrology of the site;
 - d. The development will not result in significant degradation to aquatic vegetation or life;
 - e. The development will not result in unnecessary destruction of plant materials on-site;
 - f. Proposed erosion and sediment control concepts are adequate to achieve the reductions in erosion and prevent off-site sedimentation;
 - g. Proposed stormwater management concepts are adequate to control the stormwater runoff to achieve water quality control in accordance with county Code chapter 21.5;
 - h. Proposed revegetation of disturbed areas will provide adequate erosion and sediment control benefits;
 - i. The design and location of any proposed drainfield will be in accordance of this chapter;
 - j. The development, as proposed, is consistent with the purpose and intent of this chapter; and
 - k. The cumulative impact of the proposed development, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.
- (3) The administrator shall require additional information where it is determined that potential impacts have not been adequately addressed. The administrator may require additional mitigation measures based on the criteria listed in subsections (f)(2)a. and (f)(2)b. of this section.
- (4) The administrator shall find the proposal to be inconsistent with the purpose and intent of this chapter when the impacts created by the proposal cannot be mitigated. Evaluation of the impacts will be made by the administrator based on the criteria listed in subsections (f)(1) and (f)(2) of this section.

APPLICANTS STATEMENT OF JUSTIFICATION

STATEMENT OF JUSTIFICATION IN SUPPORT OF A SPECIAL EXCEPTION FOR ENCROACHMENT INTO THE CRPA BUFFER FOR TAX MAP PARCEL 54-68B

Background:

The owner of the property, Victor Mbulu Transport Company (applicant) purchased Tax Map Parcel 54-68B (property) on August 23, 2023, with the intent of establishing a location to park and service tractor trailers. The property is 4.8576 acres in size. The property in its current configuration was established by an approved boundary line adjustment plat approved on May 7, 2012, and recorded in plat map 1200000061. The property is bounded by Cool Springs Road on the east, the CSX railway to the west, vacant county owned property to the north, and an industrial building and vacant property to the south. Claiborne Run traverses through the property. Claiborne Run has an associated Critical Resource Protection Area (CRPA) and floodplain to include a designated floodway. Approximately 76 percent of the property is encumbered by CRPA and floodplain. The site is currently vacant with no buildings. Ground cover is primarily trees and woody vegetation. There is a sanitary sewer trunk main which runs through the property parallel to Claiborne Run. A VDOT drainage pipe discharges on to the property.

Access:

The property has a frontage on Cool Spring Road. Cool Spring Road is a four-lane collector street with a raised concrete median, turn lanes and a bicycle path. There is an existing entrance to serve the property. This curb cut was established when Cool Springs Road was reconstructed several decades ago. The curb cut corresponds to a break in the raised concrete median and has a designated left turn lane.

The applicant has conducted a site-specific delineation of the CRPA on the property. This existing entrance is in the CRPA. The existing entrance is 30 feet wide and does not meet the needs of the proposed industrial business. Due to the size of the vehicles that will be using the property, the width of the entrance must be widened to accommodate turning radiuses. The site plan proposes holding the existing curb line at the north side of the entrance and widening the entrance to the south. This allows the large trucks to safely use the median break and left turn lane without encroaching on to the north bound through lanes or requiring a multi-point turn. It should be noted that the existing entrance does not meet VDOT spacing requirements to the entrance to the south which serves the existing industrial building. Any effort to move the entrance further to the south outside of the CRPA will further exacerbate non-compliance with this safety requirement and would create other safety concerns for trucks using the crossover at the median break.

Zoning:

The property is zoned M-1, Light Industrial. Based on what can be surmised from County records, the property has had this zoning since before 1974. The M-1 zone allows the proposed business as a by-right use as parking and storage of tractor trailers, truck repair, and general office. The minimum yard requirements that establish building setbacks are: front- 40 feet; side – 15 feet; and back – 15 feet. The maximum allowable floor area ratio is 0.50 which could allow a total of 105,798.5 square feet of

building space. The minimum open space requirement is 0.20 which would allow 80% of the site (3.886 acres) to be impervious surfaces such as buildings, parking areas and driveways.

Request:

The applicant seeks approval of a special exception to allow reasonable use of the property. To allow reasonable use of the property, encroachment of an entrance, necessary drive aisle and 1,200 square feet building for truck repair and maintenance must encroach into the landward 50 feet of the CRPA. There would be no seaward 50 feet encroachment except for necessary utility construction of storm drainage conveyance and sanitary sewer connection.

The proposed site design limits development on the property to the southeastern corner closest to Cool Spring Road. The reconstruction of the entrance in the landward 50 feet of the CRPA is necessary to meet safety requirements for trucks to access the property while taking advantage of the existing median break and cross-over. The proposed building location has been placed to meet building setback requirements from property lines and allow turning radius access for the truck tractors to be serviced in the proposed building and allow for circulation and parking of trucks on the site.

There would be approximately 0.02-acre of disturbance proposed in the seaward 50 feet of the RPA buffer. This is necessary for the conveyance of storm drainage from Cool Spring Road and the site and a sanitary sewer connection. There would be 0.27 acre of land disturbance in the landward 50 feet of the buffer. This is necessary for construction of the site entrance, drive aisle, and a small corner of the proposed building. Total land disturbance of the CRPA would be 0.29 acre or 12,779 square feet. Of that 0.29-acre encroachment area, 3,881 square feet would be revegetated, and 8,898 square feet would be pavement and rooftop. The applicant intends on preserving 0.5060 acre or 22,041 square feet of area outside of the CRPA located on the west side of the property as a means of mitigation for the CRPA encroachment.

Findings for Granting a Special Exception:

County Code Sec. 27B-14(d) stipulates that the Board must make **five findings** to approve a request for a special exception. Below is a listing of those five findings and a narrative describing how the application complies with the requirements.

1. **Granting this special exception will not confer onto the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and are similarly situated.** - *Cool Springs Road runs parallel to Claiborne Run. There are numerous properties along Cool Spring Road that are similarly situated where encroachment into the landward 50 feet of the CRPA buffer must occur to accommodate buildable area on the properties. The sanitary sewer main in this area is in the CRPA associated with Claiborne Run. Any new development that connects to public sewer must encroach into the CRPA.*
2. **The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels.** - *The application for the exception is not based on self-imposed conditions. Encroachment*

into the 50 feet landward portion of the CRPA is necessary to allow for any reasonable use of the property. The entrance to the property must be in proximity to its current location for safety reasons. The existing entrance is in the landward 50 feet of CRPA buffer. Any entrance improvements, necessary drive aisles and other improvements must be located within this buffer by necessity. The County zoning ordinance imposes setback and buffer requirements from property lines. The applicant has made all reasonable efforts to maximize the use of the portion of the property outside of the CRPA buffer. The proposed drainage encroachments into the landward and seaward portions of the CRPA are necessary to prevent erosion. The existing sanitary sewer main in this area is located within the CVRPA of Claiborne Run. A lateral connection from the proposed building to the sewer main must be located in the CRPA by necessity. This application has no bearing on the existing industrial developed property to the south.

3. **The special exception request will be the minimum necessary to afford relief.** - *The applicant has studied multiple alternatives regarding the placement of a building on the property to minimize encroachments into the CRPA buffer. Due to zoning requirements for meeting building setbacks, vehicle turning radii, parking, transitional buffers and street buffers, the applicant believes that the proposed configuration of the property results in the least amount of encroachment into the CRPA buffer as can be afforded while still allowing the property to be developed for the intended use.*
4. **The special exception request will be consistent with the purpose and intent of the chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare and is not of substantial detriment to water quality.** *Sec. 27B-1 of the County Code list 10 items that are the intent and purpose of the chapter. Eight of the 10 items are relevant to this application. The applicant believes that the proposed project complies with those eight items by: #1 Protect existing high-quality state waters – The use of erosion control, stormwater management measures, preserving land from future development and purchasing water quality credits will protect state waters; #2 – Restore state waters to a condition or quality that will permit all reasonable public uses and will support the propagation and growth of aquatic life, including game fish, which might reasonably be expected to inhabit them – The applicant intends on purchasing water quality credits as part of this project. The credits will be used to enhance water quality in the Commonwealth; #3 – Safeguard the clean waters of the Commonwealth from pollution – The site plan follows all county requirements for erosion control and stormwater management; #4 - Prevent increases in pollution - The site plan follows all county requirements for erosion control and stormwater management; #5 – Reduce existing pollution - Through the purchase of nutrient credits, the project will reduce existing pollution; #6 – Protect and enhance the wise use of environmental resources through management of development; - The site design uses construction of fencing and curb and gutter which limit the ability for encroachments into the CRPA and prevent erosion; #7 - Promote water resource conservation in order to provide for the health, safety, and welfare of the present and future citizens of Stafford County – The site plan proposes 0.27 acre of encroachment into the CRPA. The applicant proposes to conserve 0.5060 acre of land outside of the CRPA to promote water resource conservation; #9 – Achieve a ten (10) percent reduction in nonpoint source pollution from redevelopment – The development of the site will achieve this through the purchase of nutrient credits.*

5. **Reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.** – *The applicant believes that the Board can impose reasonable and appropriate conditions to prevent degradation of water quality. The applicant suggests two conditions: 1) Development of the property must comply with the site plan project number 24155505; and 2) The applicant shall record in the County land records a deed restriction or covenant requiring the portion of the property located on the west side of Claiborne Run to remain as open space and shall not be developed.*

VICTOR MBULU TRANSPORT COMPANY
STAFF REPORT



feet of the Chesapeake Bay Resource Protection Area buffer (CRPA) with a portion of the building, the property entrance, and a drive aisle to access the building with tractor trailers. The proposed work will impact 12,779 sq. ft. (0.293-acre) of CRPA on site. The landward 50 ft. of the CRPA will incur 11,784 sq. ft. (0.27-acre) of impacts; 9,569 (0.22-acre) of which will be permanent, and 2,215 sq. ft. (0.05-acre) will be temporarily impacted. The seaward 50 ft. of the CRPA will incur 995 sq. ft. (0.023-acre) of impacts; 370 sq. ft. (0.008-acre) of which will be permanent, and 625 sq. ft. (0.014-acre) will be temporarily impacted.

The property appears to have been platted before October 1, 1989, and has undergone a boundary line adjustment in May of 2012 which makes it ineligible for provisions under Section 27B-8(b)(5)b for pre-Chesapeake Bay lots since the boundary line adjustment generates a new plat. Furthermore, the proposed development would not qualify for 27B-8(b)(5)b since more than just the principal structure is being proposed within the landward 50-feet of the CRPA. Thus, the application cannot be approved via an Administrative Waiver and must be heard before the Chesapeake Bay Board.

Permanent impacts will be mitigated via a stormwater hydrodynamic manufactured treatment device (MTD) incorporated into the stormwater management system. The MTD will provide a 20% phosphorus removal which will compensate for the loss of RPA functionality due to the development. Temporary impacts will be mitigated via replanting; the details of which will be resolved under the major site plan review and approval process and will be in accordance with the Riparian Buffers Modification and Mitigation Guidance Manual.

ROLE OF THE BOARD:

The board may decide to grant, grant in modified form, or deny a Special Exception application. A decision requires a weighing and balancing of all beneficial and detrimental factors relevant to a proposal, leading to a permit decision that reflects the outcome of that balancing process, known as a public interest review. The local Chesapeake Bay Board has the power to modify an application so that the approved permit meets the purpose of the Chesapeake Bay Act. In making this determination, the local Chesapeake Bay Board must:

1. Review the request for a special exception and the water quality impact assessment;
2. Find that the Wetlands Joint Permit Application meets the 4 criteria of the Group II living shoreline guidance.
3. Hear the testimony of any person in support of or in opposition to the permit;
4. Find that granting the special exception will not confer upon the applicant's any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;



5. Find that the special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;
6. Find that the special exception request is the minimum necessary to afford relief;
7. Find that the special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
8. Find that reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.

If any of the criteria above are not met, the board shall deny the application.

ALTERNATIVES:

The following alternatives are available to the Board:

1. Adopt proposed Resolution CBB24-5 which approves the request for development of the property based on the submitted major site plan (AP24155505) and the WQIA exhibit.
2. Adopt proposed Resolution CBB24-6 which denies the request.
3. Revise and adopt proposed Resolution CBB24-5
4. Take no action at this time and defer the application to the next meeting. (Applicant must be present for action to be taken by the Board)

STAFF FINDINGS

- The proposed development is ineligible for provisions under Section 27B-8(b)(5)b for pre-Chesapeake Bay lots since the boundary line adjustment of May 2012 generates a new plat. Furthermore, the proposed development would not qualify for 27B-8(b)(5)b since more than just the principal structure is being proposed within the landward 50-feet of the CRPA. Thus, a Chesapeake Bay Special Exception Board hearing and approval is required.
- The proposed replanting of 3,881 square feet of RPA and the 20% phosphorus removal rate of the stormwater treatment system is an effort to mitigate RPA impacts and improve water quality. The planting area and planting rates will be in accordance with Appendix D of the Riparian Buffers Modification and Mitigation Manual and will be detailed in the major site plan application (AP24155505).

ATTACHMENT 1
WETLANDS AND CRPA DELINEATION



Army Corps of Engineers
Wetland Delineation

Cool Springs Road
TM 54-68B

Stafford County, Virginia

Prepared For:

Legacy Engineering
c/o Mr. Bruce Reese
419 Chatham Square Office Park
Fredericksburg, VA 22405

Prepared By:

Rappahannock Environmental Group (REG)
10720 Columbia Drive
P.O. Box 871
Fredericksburg, VA 22404
Phone: 540-870-5630

January 24, 2024



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January 24, 2023

Ms. Silvia Gazzera
US Army Corps of Engineers
Fredericksburg Field Office (Norfolk District Regulatory Branch: Northern Section)
Phone: Cell (804)-212-6817
Email: silvia.b.gazzera@usace.army.mil

**RE: PJD Request
Cool Springs Road (TM 54-68B)
Stafford County, Virginia**

Dear Ms. Gazzera:

Rappahannock Environmental Group (REG) has completed a wetland delineation using the Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual and the Regional Supplement for the Atlantic and Gulf Coastal Plain (Version 2.0) for the above referenced project located in Westmoreland County (Figure 1). The field work was completed in November 2023.

PROJECT AREA

The site is located on the above referenced parcel in the area of 40 Cool Springs Rd, Fredericksburg, VA 22405 (Stafford County). The project lies within the Hazel Run-Rappahannock River watershed (Rappahannock River Basin). The lot totals approximately 4.86 acres in size and is shown in detail on the attached wetland delineation map (Figure 5) and the USGS Topographical Quadrangle Project Area map (Figure 1).

The subject area consists of predominantly hardwood forest. The existing topography is gently to moderately sloping and drains to the perennial feature that bisects the parcel that runs north to south. The USGS 7.5-minute Topographical Quadrangle Map for Fredericksburg, VA identifies a perennial feature, labeled as Claiborne Run, in the location of investigation; along with Stafford County GIS (as shown by blue lines); however, neither mapping system identified any potential wetlands or additional WOTUS features within the subject area. Stafford County requires a delineation of any and all properties with potential wetlands as part of the site plan approval process.

METHODOLOGY

REG staff used the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) to determine the presence and extent of potential wetlands and/or waters classified as "Waters of the U.S." According to the 1987 Manual and Regional Supplement, three indicators are used to determine the existence of wetlands. All three of these indicators must be present for an area to be classified as a wetland. These three indicators are:

1. Hydrophytic Vegetation – This is defined as "the sum total of macrophytic plant life that occurs in areas where frequency and duration of inundation or soil saturation produce

permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.

2. Hydric Soils – This can be defined as a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part.
3. Wetland Hydrology – This term “encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

PRELIMINARY DATA GATHERING

The following resources were consulted to provide background information, including recorded data and mapping, pertaining to the project site. These resources included, but were not limited to, the:

- U.S. Geological Survey (USGS) Topographic Map Fredericksburg, VA Quadrangle (Figure 1)
- National Wetland Inventory (NWI) Maps for Stafford County, Virginia, U.S. Fish and Wildlife Services (Figure 2)
- Soil Survey of Stafford County, Virginia (USDA on-line mapping)
- On-line aerial photography (Google)
- Stafford County GIS System

SITE OBSERVATIONS

One community was located throughout the project area and was investigated for the presence of wetlands and Waters of the U.S. features. The following is a brief narrative of the findings within this community:

Community #1 is located along the entire subject area. Eight areas within this community were investigated for the presence of wetlands; samples taken on both the eastern and western portions of the parcel (on either side of Claiborne Run) . Wetlands were present within this area of investigation.

CONCLUSIONS

Based on the data presented in this report, it appears that wetlands are present along portions of the project area, as shown on the attached map.

LIMITATIONS

REG prepared this wetland delineation for the exclusive use of Mr. Bruce Reese, Legacy Engineering, and their authorized agents. This report cannot be transferred without the written consent of REG or the client. This document was prepared using observations made in the field at the time of the site visit and, in part, upon information provided by others. Changing weather conditions and differing interpretation of field observations may influence the characterization and delineation of wetlands on the site.

If you have questions regarding this report and its findings, please call me at (540) 870-5630.

Sincerely,

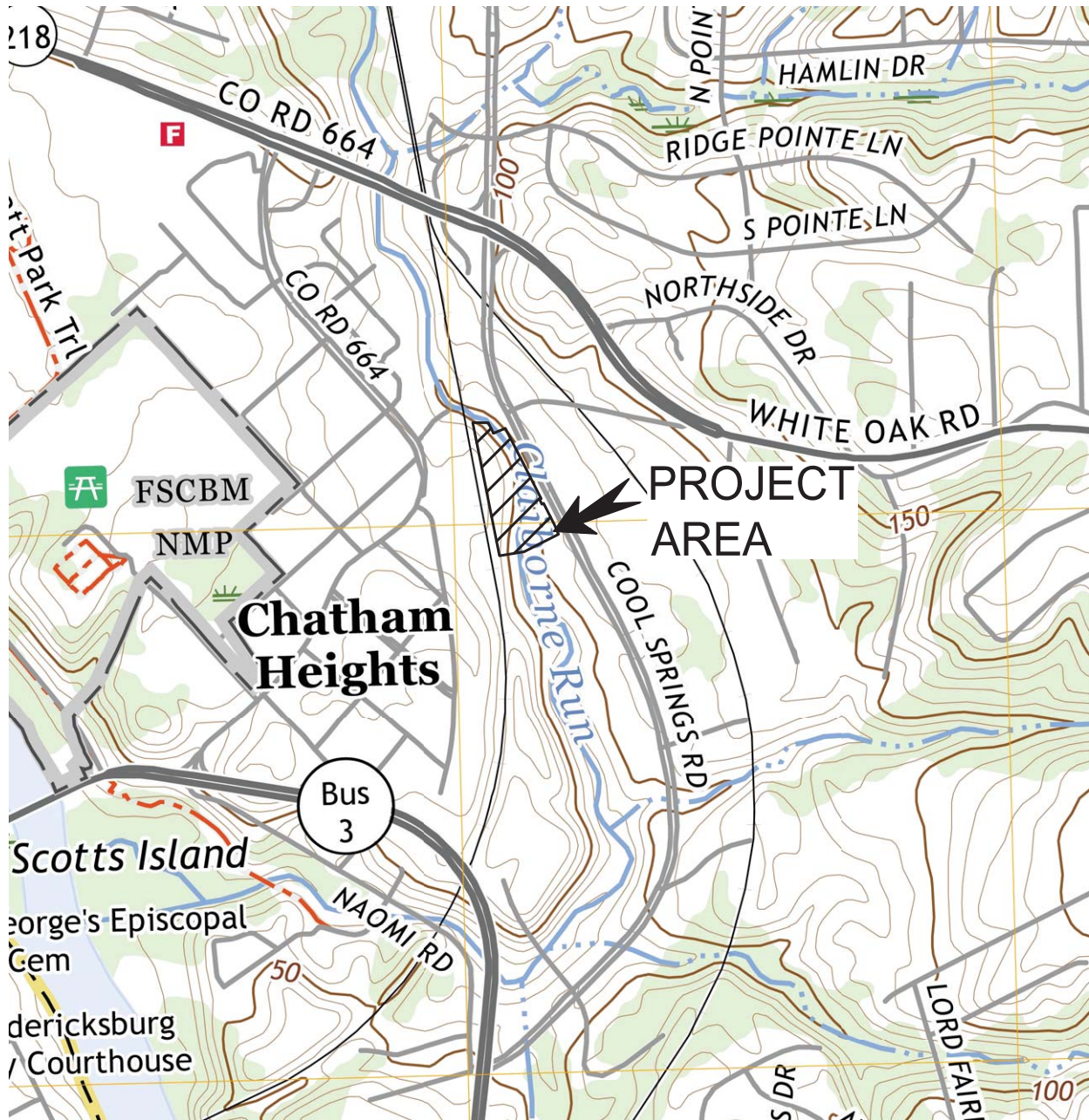


Michael W. Blake, PWD, LEED AP
Rappahannock Environmental Group

Enclosures: USGS Topographical Quadrangles – portion of Fredericksburg, VA
NWI Map
USACE Wetland Data Forms
Soil Descriptions
Photographs
Map of Site

Figure 1 – USGS Topographical Map

COOL SPRINGS ROAD TM 54-68B (STAFFORD COUNTY, VIRGINIA)



USGS TOPOGRAPHIC QUADRANGLE FREDERICKSBURG, VA 2022

COOL SPRINGS ROAD TM 54-68B
LATITUDE: 38°18'36.8"N LONGITUDE: 77°26'46.8"W
SCALE: 1" = 1000'
DATE: 01-25-2024
TOTAL PROJECT AREA ACREAGE: 4.86 AC.

Figure 2 – NWI Map



U.S. Fish and Wildlife Service

National Wetlands Inventory

Cool Springs Road (TM54-68B) NWI Wetlands Map



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

December 7, 2023

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Figure 3 –USACE Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
 Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-1-1
 Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes _____	No ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-1-1**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula nigra</u>	<u>20</u>		FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)														
2. <u>Liquidambar styraciflua</u>	<u>40</u>	YES	FAC															
3. <u>Platanus occidentalis</u>	<u>45</u>	YES	FACW															
4. <u>Betula alleghaniensis</u>	<u>30</u>	YES	FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
			<u>135</u> = Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>190</u></td> <td>x 3 = <u>570</u></td> </tr> <tr> <td>FACU species <u>210</u></td> <td>x 4 = <u>840</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>475</u> (A)</td> <td><u>1,575</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.32</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>190</u>	x 3 = <u>570</u>	FACU species <u>210</u>	x 4 = <u>840</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>475</u> (A)	<u>1,575</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
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FACU species <u>210</u>	x 4 = <u>840</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>475</u> (A)	<u>1,575</u> (B)																	
50% of total cover: <u>67.5</u>			20% of total cover: <u>27.0</u>															
Sapling Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>20</u>		FAC															
2. <u>Fagus grandifolia</u>	<u>15</u>		FACU															
3. <u>Acer rubrum</u>	<u>15</u>		FAC															
4. <u>Ilex opaca</u> (10)/ <u>Carpinus caroliniana</u> (10)	<u>20</u>		FAC															
5. <u>Carya glabra</u>	<u>10</u>		FACU															
6. <u>Quercus rubra</u>	<u>30</u>	YES	FACU															
			<u>110</u> = Total Cover															
50% of total cover: <u>55.0</u>			20% of total cover: <u>22.0</u>															
Shrub Stratum (_____)																		
1. <u>Ilex opaca</u>	<u>35</u>	YES	FAC															
2. <u>Quercus rubra</u>	<u>40</u>	YES	FACU															
3. <u>Juniperus virginiana</u>	<u>10</u>		FACU															
4. <u>Fagus grandifolia</u>	<u>15</u>		FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
			<u>100</u> = Total Cover															
50% of total cover: <u>50.0</u>			20% of total cover: <u>20.0</u>															
Herb Stratum (_____)																		
1. <u>Quercus rubra</u>	<u>20</u>	YES	FACU															
2. <u>Ilex opaca</u>	<u>20</u>	YES	FAC															
3. <u>Quercus phellos</u>	<u>5</u>		FACW															
4. <u>Verbena urticifolia</u>	<u>5</u>		FAC															
5. <u>Ligustrum sinense</u>	<u>5</u>		FAC															
6. <u>Rubus allegheniensis</u>	<u>5</u>		UPL															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
			<u>60</u> = Total Cover															
50% of total cover: <u>30.0</u>			20% of total cover: <u>12.0</u>															
Woody Vine Stratum (_____)																		
1. <u>Lonicera japonica</u>	<u>40</u>	YES	FACU															
2. <u>Smilax rotundifolia</u>	<u>30</u>	YES	FAC															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
			<u>70</u> = Total Cover															
50% of total cover: <u>35.0</u>			20% of total cover: <u>14.0</u>															
Remarks: (If observed, list morphological adaptations below).																		

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes ☒
No ☐

SOIL

Sampling Point: **1-1-1****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1								
1-5	7.5YR 5/6	100						Sandy loam
5-12	5YR 4/6	100						Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-1-2
Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	
Remarks: Located within utility easement directly above streambank.			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Aquatic Fauna (B13)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Marl Deposits (B15) (LRR U)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Hydrogen Sulfide Odor (C1)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Presence of Reduced Iron (C4)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Thin Muck Surface (C7)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Other (Explain in Remarks)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)		_____ FAC-Neutral Test (D5)
_____ Water-Stained Leaves (B9)		_____ Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes _____ No ☒
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-1-2**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Liquidambar styraciflua</u>	<u>20</u>	YES	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>12</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)														
2. <u>Acer rubrum</u>	<u>10</u>	YES	FAC															
3. <u>Platanus occidentalis</u>	<u>15</u>	YES	FACW															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
50% of total cover: <u>22.5</u> 20% of total cover: <u>9.0</u>			Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>110</u></td> <td>x 3 = <u>330</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>580</u> (B)</td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>110</u>	x 3 = <u>330</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>580</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>110</u>	x 3 = <u>330</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>185</u> (A)	<u>580</u> (B)																	
50% of total cover: <u>5.0</u> 20% of total cover: <u>2.0</u>			Prevalence Index = B/A = <u>3.14</u>															
Sapling Stratum (_____)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.														
1. <u>Liquidambar styraciflua</u>	<u>10</u>	YES	FAC															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>5.0</u> 20% of total cover: <u>2.0</u>																		
Shrub Stratum (_____)				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
1. <u>Juniperus virginiana</u>	<u>15</u>	YES	FACU															
2. <u>Betula nigra</u>	<u>10</u>	YES	FACW															
3. <u>Acer rubrum</u>	<u>10</u>	YES	FAC															
4. <u>Ligustrum sinense</u>	<u>15</u>	YES	FAC															
5. _____	_____	_____	_____															
50% of total cover: <u>50</u> 20% of total cover: <u>10.0</u>																		
Herb Stratum (_____)				Hydrophytic Vegetation Present? Yes ☒ No _____														
1. <u>Rosa multiflora</u>	<u>15</u>	YES	FACU															
2. <u>Microstegium vimineum</u>	<u>35</u>	YES	FAC															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>25.0</u> 20% of total cover: <u>10.0</u>																		
Woody Vine Stratum (_____)																		
1. <u>Lonicera japonica</u>	<u>20</u>	YES	FACU															
2. <u>Smilax rotundifolia</u>	<u>10</u>	YES	FAC															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>15.0</u> 20% of total cover: <u>6.0</u>																		
50% of total cover: <u>30</u> 20% of total cover: <u>10.0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: 1-1-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/4	100						Sandy loam
4-10	10YR 4/6	100						Sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

- | | | |
|---|--|---|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR S, T, U) | ☐ 1 cm Muck (A9) (LRR O) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR S, T, U) | ☐ 2 cm Muck (A10) (LRR S) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR O) | ☐ Reduced Vertic (F18) (outside MLRA 150A,B) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) | ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) | ☐ Anomalous Bright Loamy Soils (F20) |
| ☐ Organic Bodies (A6) (LRR P, T, U) | ☐ Redox Dark Surface (F6) | (MLRA 153B) |
| ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U) | ☐ Depleted Dark Surface (F7) | ☐ Red Parent Material (TF2) |
| ☐ Muck Presence (A8) (LRR U) | ☐ Redox Depressions (F8) | ☐ Very Shallow Dark Surface (TF12) (LRR T, U) |
| ☐ 1 cm Muck (A9) (LRR P, T) | ☐ Marl (F10) (LRR U) | ☐ Other (Explain in Remarks) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Ochric (F11) (MLRA 151) | |
| ☐ Thick Dark Surface (A12) | ☐ Iron-Manganese Masses (F12) (LRR O, P, T) | |
| ☐ Coast Prairie Redox (A16) (MLRA 150A) | ☐ Umbric Surface (F13) (LRR P, T, U) | |
| ☐ Sandy Mucky Mineral (S1) (LRR O, S) | ☐ Delta Ochric (F17) (MLRA 151) | |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Reduced Vertic (F18) (MLRA 150A, 150B) | |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 149A) | |
| ☐ Stripped Matrix (S6) | ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | |
| ☐ Dark Surface (S7) (LRR P, S, T, U) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-1-3
Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		___ Surface Soil Cracks (B6)
___ Surface Water (A1)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ High Water Table (A2)	___ Marl Deposits (B15) (LRR U)	☒ Drainage Patterns (B10)
___ Saturation (A3)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Thin Muck Surface (C7)	☒ Geomorphic Position (D2)
___ Iron Deposits (B5)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Inundation Visible on Aerial Imagery (B7)		___ FAC-Neutral Test (D5)
___ Water-Stained Leaves (B9)		___ Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes ☒ No ☐
Surface Water Present? Yes _____ No ☒ Depth (inches): _____		
Water Table Present? Yes _____ No ☒ Depth (inches): _____		
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Located along stream channel.		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: 1-1-3

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula nigra</u>	<u>30</u>	YES	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77.8%</u> (A/B)														
2. <u>Platanus occidentalis</u>	<u>15</u>	YES	FACW															
3. <u>Acer rubrum</u>	<u>10</u>	NO	FAC															
4. <u>Pinus virginiana</u>	<u>15</u>	YES	NI															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>70</u> = Total Cover 50% of total cover: <u>35.0</u> 20% of total cover: <u>14.0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>385</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.75</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>85</u>	x 3 = <u>255</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>385</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>45</u>	x 2 = <u>90</u>																	
FAC species <u>85</u>	x 3 = <u>255</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>140</u> (A)	<u>385</u> (B)																	
<u>20</u> = Total Cover 50% of total cover: <u>10.0</u> 20% of total cover: <u>4.0</u>																		
Sapling Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>20</u>	YES	FAC															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>20</u> = Total Cover 50% of total cover: <u>10.0</u> 20% of total cover: <u>4.0</u>																		
Shrub Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>15</u>	YES	FAC	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>15</u> = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3.0</u>																		
Herb Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>10</u>	YES	FAC	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. <u>Microstegium vimineum</u>	<u>20</u>	YES	FAC															
3. <u>Quercus rubra</u>	<u>10</u>	YES	FACU															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>40</u> = Total Cover 50% of total cover: <u>20.0</u> 20% of total cover: <u>8.0</u>																		
Woody Vine Stratum (_____)																		
1. <u>Smilax rotundifolia</u>	<u>10</u>	YES	FAC	Hydrophytic Vegetation Present? Yes ☒ No _____														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>10</u> = Total Cover 50% of total cover: <u>5.0</u> 20% of total cover: <u>2.0</u>																		

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1-1-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 6/2	100						Sandy loam
4-10	10YR 4/4	70	10YR 5/8	30				Sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Mucky Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☒ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-2-1
Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Aquatic Fauna (B13)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Marl Deposits (B15) (LRR U)	☒ Sparsely Vegetated Concave Surface (B8)
☐ Saturation (A3)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Presence of Reduced Iron (C4)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Thin Muck Surface (C7)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Other (Explain in Remarks)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)		☐ Shallow Aquitard (D3)
☐ Water-Stained Leaves (B9)		☐ FAC-Neutral Test (D5)
		☐ Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes _____ No ☒
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-2-1**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Ilex opaca</u>	<u>20</u>	<u>NO</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)														
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<u>YES</u>	<u>FAC</u>															
3. <u>Betula nigra</u>	<u>10</u>	<u>NO</u>	<u>FACW</u>															
4. <u>Fagus grandifolia</u>	<u>30</u>	<u>YES</u>	<u>FACU</u>															
5. <u>Quercus rubra</u>	<u>15</u>		<u>FACU</u>															
6. _____																		
			<u>105</u> = Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>95</u></td> <td>x 2 = <u>190</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>260</u> (A)</td> <td><u>790</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.04</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>95</u>	x 2 = <u>190</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>260</u> (A)	<u>790</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>95</u>	x 2 = <u>190</u>																	
FAC species <u>60</u>	x 3 = <u>180</u>																	
FACU species <u>105</u>	x 4 = <u>420</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>260</u> (A)	<u>790</u> (B)																	
50% of total cover: <u>52.5</u>			20% of total cover: <u>21.0</u>															
Sapling Stratum (_____)																		
1. <u>Betula nigra</u>	<u>5</u>	<u>NO</u>	<u>FACW</u>															
2. <u>Fagus grandifolia</u>	<u>20</u>	<u>YES</u>	<u>FACU</u>															
3. <u>Acer rubrum</u>	<u>10</u>	<u>YES</u>	<u>FAC</u>															
4. _____																		
5. _____																		
6. _____																		
			<u>35</u> = Total Cover															
50% of total cover: <u>17.5</u>			20% of total cover: <u>7.0</u>															
Shrub Stratum (_____)																		
1. <u>Quercus phellos</u>	<u>20</u>	<u>YES</u>	<u>FACW</u>															
2. <u>Polystichum acrostichoides</u>	<u>5</u>	<u>YES</u>	<u>FACU</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
			<u>25</u> = Total Cover															
50% of total cover: <u>12.5</u>			20% of total cover: <u>5.0</u>															
Herb Stratum (_____)																		
1. <u>Dichanthelium clandestinum</u>	<u>60</u>	<u>YES</u>	<u>FACW</u>															
2. <u>Polystichum acrostichoides</u>	<u>10</u>	<u>NO</u>	<u>FACU</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
			<u>70</u> = Total Cover															
50% of total cover: <u>35.0</u>			20% of total cover: <u>14.0</u>															
Woody Vine Stratum (_____)																		
1. <u>Lonicera japonica</u>	<u>25</u>	<u>YES</u>	<u>FACU</u>															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
			<u>25</u> = Total Cover															
50% of total cover: <u>12.5</u>			20% of total cover: <u>5.0</u>															
Hydrophytic Vegetation Present?																		
Yes _____ No ☒																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: 1-2-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1								
1-7	7.5YR 4/4	100						Sandy
7-12	10YR 6/3	100						Sandy

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20)
- ☐ **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
 Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-3-1
 Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) _____ Aquatic Fauna (B13) ☐ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) ☒ Saturation (A3) ☒ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) ☐ Iron Deposits (B5) _____ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ☒ No _____ Depth (inches): _____ Water Table Present? Yes ☒ No _____ Depth (inches): <u>9 inches</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>0 inches</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-3-1**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Liquidambar styraciflua</u>	<u>40</u>	YES	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.6%</u> (A/B)														
2. <u>Platanus occidentalis</u>	<u>35</u>	YES	FACW															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
75 = Total Cover																		
50% of total cover: <u>37.5</u>		20% of total cover: <u>15.0</u>																
Sapling Stratum (_____)																		
1. <u>Prunus serotina</u>	<u>25</u>	YES	FACU	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>130</u></td> <td>x 2 = <u>260</u></td> </tr> <tr> <td>FAC species <u>125</u></td> <td>x 3 = <u>375</u></td> </tr> <tr> <td>FACU species <u>135</u></td> <td>x 4 = <u>540</u></td> </tr> <tr> <td>UPL species <u>60</u></td> <td>x 5 = <u>300</u></td> </tr> <tr> <td>Column Totals: <u>450</u> (A)</td> <td><u>1,475</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.28</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>130</u>	x 2 = <u>260</u>	FAC species <u>125</u>	x 3 = <u>375</u>	FACU species <u>135</u>	x 4 = <u>540</u>	UPL species <u>60</u>	x 5 = <u>300</u>	Column Totals: <u>450</u> (A)	<u>1,475</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>130</u>	x 2 = <u>260</u>																	
FAC species <u>125</u>	x 3 = <u>375</u>																	
FACU species <u>135</u>	x 4 = <u>540</u>																	
UPL species <u>60</u>	x 5 = <u>300</u>																	
Column Totals: <u>450</u> (A)	<u>1,475</u> (B)																	
2. <u>Betula nigra</u>	<u>15</u>	YES	FACW															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
40 = Total Cover																		
50% of total cover: <u>20.0</u>		20% of total cover: <u>8.0</u>																
Shrub Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>15</u>	YES	FAC	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation ☒ <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.														
2. <u>Ligustrum sinense</u>	<u>30</u>	YES	FAC															
3. <u>Quercus phellos</u>	<u>10</u>	NO	FACW															
4. <u>Quercus rubra</u>	<u>15</u>	YES	FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
70 = Total Cover																		
50% of total cover: <u>35.0</u>		20% of total cover: <u>14.0</u>																
Herb Stratum (_____)																		
1. <u>Rosa multiflora</u>	<u>35</u>	NO	FACU	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. <u>Rubus allegheniensis</u>	<u>60</u>	YES	UPL															
3. <u>Dichanthelium clandestinum</u>	<u>35</u>	NO	FACW															
4. <u>Microstegium vimineum</u>	<u>30</u>	NO	FAC															
5. <u>Cinna arundinacea</u>	<u>20</u>	NO	FACW															
6. <u>Leersia virginica</u>	<u>15</u>	NO	FACW															
7. <u>Thalictrum dioicum</u>	<u>10</u>	NO	FAC															
8. <u>Polystichum acrostichoides</u>	<u>20</u>	NO	FACU															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
225 = Total Cover																		
50% of total cover: <u>112.5</u>		20% of total cover: <u>45.0</u>																
Woody Vine Stratum (_____)																		
1. <u>Lonicera japonica</u>	<u>40</u>	YES	FACU	Hydrophytic Vegetation Present? Yes ☒ No _____														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
40 = Total Cover																		
50% of total cover: <u>20.0</u>		20% of total cover: <u>8.0</u>																
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: **1-3-1****Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5								
5-4	2.5y 5/2	85	10yr 3/6	15				Sandy loam
4-14	10yr 4/1	100						Silty loam sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) (LRR S, T, U) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) (LRR S, T, U) |
| ☐ Black Histic (A3) | ☐ Loamy Mucky Mineral (F1) (LRR O) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ Organic Bodies (A6) (LRR P, T, U) | ☐ Redox Dark Surface (F6) |
| ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U) | ☐ Depleted Dark Surface (F7) |
| ☐ Muck Presence (A8) (LRR U) | ☐ Redox Depressions (F8) |
| ☐ 1 cm Muck (A9) (LRR P, T) | ☐ Marl (F10) (LRR U) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Ochric (F11) (MLRA 151) |
| ☐ Thick Dark Surface (A12) | ☐ Iron-Manganese Masses (F12) (LRR O, P, T) |
| ☐ Coast Prairie Redox (A16) (MLRA 150A) | ☐ Umbric Surface (F13) (LRR P, T, U) |
| ☐ Sandy Mucky Mineral (S1) (LRR O, S) | ☐ Delta Ochric (F17) (MLRA 151) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Reduced Vertic (F18) (MLRA 150A, 150B) |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 149A) |
| ☐ Stripped Matrix (S6) | ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) |
| ☐ Dark Surface (S7) (LRR P, S, T, U) | |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| ☐ 1 cm Muck (A9) (LRR O) |
| ☐ 2 cm Muck (A10) (LRR S) |
| ☐ Reduced Vertic (F18) (outside MLRA 150A,B) |
| ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T) |
| ☐ Anomalous Bright Loamy Soils (F20) |
| (MLRA 153B) |
| ☐ Red Parent Material (TF2) |
| ☐ Very Shallow Dark Surface (TF12) (LRR T, U) |
| ☐ Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
 Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-3-2
 Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes _____	No ☒
Hydric Soil Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-3-2**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fagus grandifolia</u>	<u>10</u>	YES	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)														
2. <u>Acer rubrum</u>	<u>15</u>	YES	FAC															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>25</u> = Total Cover 50% of total cover: <u>12.5</u> 20% of total cover: <u>5.0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>55</u></td> <td>x 3 = <u>165</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>455</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.03</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>55</u>	x 3 = <u>165</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>455</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>45</u>	x 2 = <u>90</u>																	
FAC species <u>55</u>	x 3 = <u>165</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>150</u> (A)	<u>455</u> (B)																	
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7.0</u>																		
Sapling Stratum (_____)																		
1. <u>Betula nigra</u>	<u>10</u>	YES	FACW															
2. <u>Liquidambar styraciflua</u>	<u>15</u>	YES	FAC															
3. <u>Juniperus virginiana</u>	<u>10</u>	YES	FACU															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7.0</u>																		
Shrub Stratum (_____)																		
1. <u>Juniperus virginiana</u>	<u>5</u>	NO	FACU	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.														
2. <u>Solidago altissima</u>	<u>15</u>	YES	FACU															
3. <u>Ligustrum sinense</u>	<u>10</u>	YES	FAC															
4. <u>Viburnum prunifolium</u>	<u>5</u>	NO	FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7.0</u>																		
Herb Stratum (_____)																		
1. <u>Dichanthelium clandestinum</u>	<u>35</u>	YES	FACW	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7.0</u>																		
Woody Vine Stratum (_____)																		
1. <u>Smilax rotundifolia</u>	<u>15</u>	YES	FAC	Hydrophytic Vegetation Present? Yes ☒ No _____														
2. <u>Lonicera japonica</u>	<u>5</u>	YES	FACU															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>20</u> = Total Cover 50% of total cover: <u>10.0</u> 20% of total cover: <u>4.0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: 1-3-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1								
1-6	7.5YR 5/6	100						
6-12	7.5YR 5/4	95	10YR 6/4	5				

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
 Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-4-2
 Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland?	Yes ☒	No ☐
Hydric Soil Present?	Yes ☒	No ☐			
Wetland Hydrology Present?	Yes ☒	No ☐			
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) _____ Aquatic Fauna (B13) ☐ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) ☒ Saturation (A3) _____ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) ☐ Iron Deposits (B5) _____ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ☒ No _____ Depth (inches): <u>0 inches</u> Water Table Present? Yes ☒ No _____ Depth (inches): <u>1 inch</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>1 inch</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-4-2**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Betula nigra</u>	<u>35</u>	YES	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>81.8%</u> (A/B)														
2. <u>Platanus occidentalis</u>	<u>15</u>	YES	FACW															
3. <u>Liriodendron tulipifera</u>	<u>10</u>		FACU															
4. _____																		
5. _____																		
6. _____																		
60 = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>135</u></td> <td>x 2 = <u>270</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>215</u> (A)</td> <td><u>535</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.49</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>135</u>	x 2 = <u>270</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>215</u> (A)	<u>535</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>135</u>	x 2 = <u>270</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>45</u>	x 4 = <u>180</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>215</u> (A)	<u>535</u> (B)																	
50% of total cover: <u>30.0</u> 20% of total cover: <u>12.0</u>																		
Sapling Stratum (_____)																		
1. <u>Fagus grandifolia</u>	<u>25</u>	YES	FACU															
2. <u>Betula nigra</u>	<u>15</u>	YES	FACW															
3. <u>Alnus serrulata</u>	<u>5</u>		FACW															
4. _____																		
5. _____																		
6. _____																		
45 = Total Cover																		
50% of total cover: <u>22.5</u> 20% of total cover: <u>9.0</u>																		
Shrub Stratum (_____)																		
1. <u>Alnus serrulata</u>	<u>30</u>	YES	FACW	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.														
2. <u>Ligustrum sinense</u>	<u>15</u>	YES	FAC															
3. <u>Dichanthelium clandestinum</u>	<u>10</u>		FACW															
4. _____																		
5. _____																		
6. _____																		
55 = Total Cover																		
50% of total cover: <u>27.5</u> 20% of total cover: <u>11.0</u>																		
Herb Stratum (_____)																		
1. <u>Dichanthelium clandestinum</u>	<u>15</u>	YES	FACW	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. <u>Lycopus uniflorus</u>	<u>10</u>	YES	OBL															
3. <u>Carex vulpinoidea</u>	<u>10</u>	YES	FACW															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
35 = Total Cover																		
50% of total cover: <u>17.5</u> 20% of total cover: <u>7.0</u>																		
Woody Vine Stratum (_____)																		
1. <u>Lonicera japonica</u>	<u>10</u>	YES	FACU															
2. <u>Smilax rotundifolia</u>	<u>10</u>	YES	FAC															
3. _____																		
4. _____																		
5. _____																		
20 = Total Cover																		
50% of total cover: <u>10.0</u> 20% of total cover: <u>4.0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

SOIL

Sampling Point: 1-4-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1								
1-4	10YR 3/1	100						Silty loam
4-12	10YR 4/1	100						Silty loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Cool Springs Road (TM 54 68B) City/County: Stafford Sampling Date: 11-20-23
Applicant/Owner: Legacy Engineering/Bruce Reese State: VA Sampling Point: 1-5-1
Investigator(s): M. Blake/T. Futrell/G. Pavan Section, Township, Range: _____
Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☒	No ☐	
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Aquatic Fauna (B13)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Marl Deposits (B15) (LRR U)	☒ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Hydrogen Sulfide Odor (C1)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	☒ Oxidized Rhizospheres on Living Roots (C3)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Presence of Reduced Iron (C4)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Thin Muck Surface (C7)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Other (Explain in Remarks)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)		_____ FAC-Neutral Test (D5)
_____ Water-Stained Leaves (B9)		_____ Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes ☒ No _____
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: **1-5-1**

Tree Stratum (Plot sizes: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Carpinus caroliniana</u>	<u>35</u>	YES	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>12</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)														
2. <u>Betula nigra</u>	<u>35</u>	YES	FACW															
3. <u>Prunus serotina</u>	<u>40</u>	YES	FACU															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>110</u> = Total Cover 50% of total cover: <u>55.0</u> 20% of total cover: <u>22.0</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>150</u></td> <td>x 2 = <u>300</u></td> </tr> <tr> <td>FAC species <u>270</u></td> <td>x 3 = <u>810</u></td> </tr> <tr> <td>FACU species <u>135</u></td> <td>x 4 = <u>540</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>565</u> (A)</td> <td><u>1,700</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.01</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>150</u>	x 2 = <u>300</u>	FAC species <u>270</u>	x 3 = <u>810</u>	FACU species <u>135</u>	x 4 = <u>540</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>565</u> (A)	<u>1,700</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>150</u>	x 2 = <u>300</u>																	
FAC species <u>270</u>	x 3 = <u>810</u>																	
FACU species <u>135</u>	x 4 = <u>540</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>565</u> (A)	<u>1,700</u> (B)																	
<u>150</u> = Total Cover 50% of total cover: <u>75.0</u> 20% of total cover: <u>30.0</u>																		
Sapling Stratum (_____)																		
1. <u>Alnus serrulata</u>	<u>45</u>	YES	FACW															
2. <u>Liquidambar styraciflua</u>	<u>30</u>	YES	FAC															
3. <u>Carpinus caroliniana</u>	<u>35</u>	YES	FAC															
4. <u>Prunus serotina</u>	<u>40</u>	YES	FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>150</u> = Total Cover 50% of total cover: <u>75.0</u> 20% of total cover: <u>30.0</u>																		
Shrub Stratum (_____)																		
1. <u>Liquidambar styraciflua</u>	<u>25</u>	YES	FAC															
2. <u>Ligustrum sinense</u>	<u>25</u>	YES	FAC															
3. <u>Ulmus americana</u>	<u>5</u>	NO	FAC															
4. <u>Prunus serotina</u>	<u>10</u>	NO	FACU															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
<u>65</u> = Total Cover 50% of total cover: <u>32.5</u> 20% of total cover: <u>13.0</u>																		
Herb Stratum (_____)																		
1. <u>Microstegium vimineum</u>	<u>75</u>	YES	FAC															
2. <u>Allium vineale</u>	<u>20</u>	NO	FACU															
3. <u>Berberis thunbergii</u>	<u>5</u>	NO	UPL															
4. <u>Alnus serrulata</u>	<u>40</u>	NO	FACW															
5. <u>Dichanthelium clandestinum</u>	<u>30</u>	NO	FACW															
6. <u>Solidago rugosa</u>	<u>30</u>	NO	FAC															
7. <u>Elymus virginicus</u>	<u>5</u>	NO	FAC															
8. <u>Rubus allegheniensis</u>	<u>5</u>	NO	UPL															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>210</u> = Total Cover 50% of total cover: <u>105.0</u> 20% of total cover: <u>42.0</u>																		
Woody Vine Stratum (_____)																		
1. <u>Smilax rotundifolia</u>	<u>5</u>	NO	FAC															
2. <u>Lonicera japonica</u>	<u>10</u>	YES	FACU															
3. <u>Hedera helix</u>	<u>15</u>	YES	FACU															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>30</u> = Total Cover 50% of total cover: <u>15.0</u> 20% of total cover: <u>6.0</u>																		
Remarks: (If observed, list morphological adaptations below).																		

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: 1-5-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1								
1-3	10YR 4/2	80	5YR 5/8					Silty loam
3-14	5Y 4/4	70	7.5YR 5/8	30				Silty clay sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

- | | | |
|---|---|--|
| ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U) | ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) | ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks) |
|---|---|--|

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

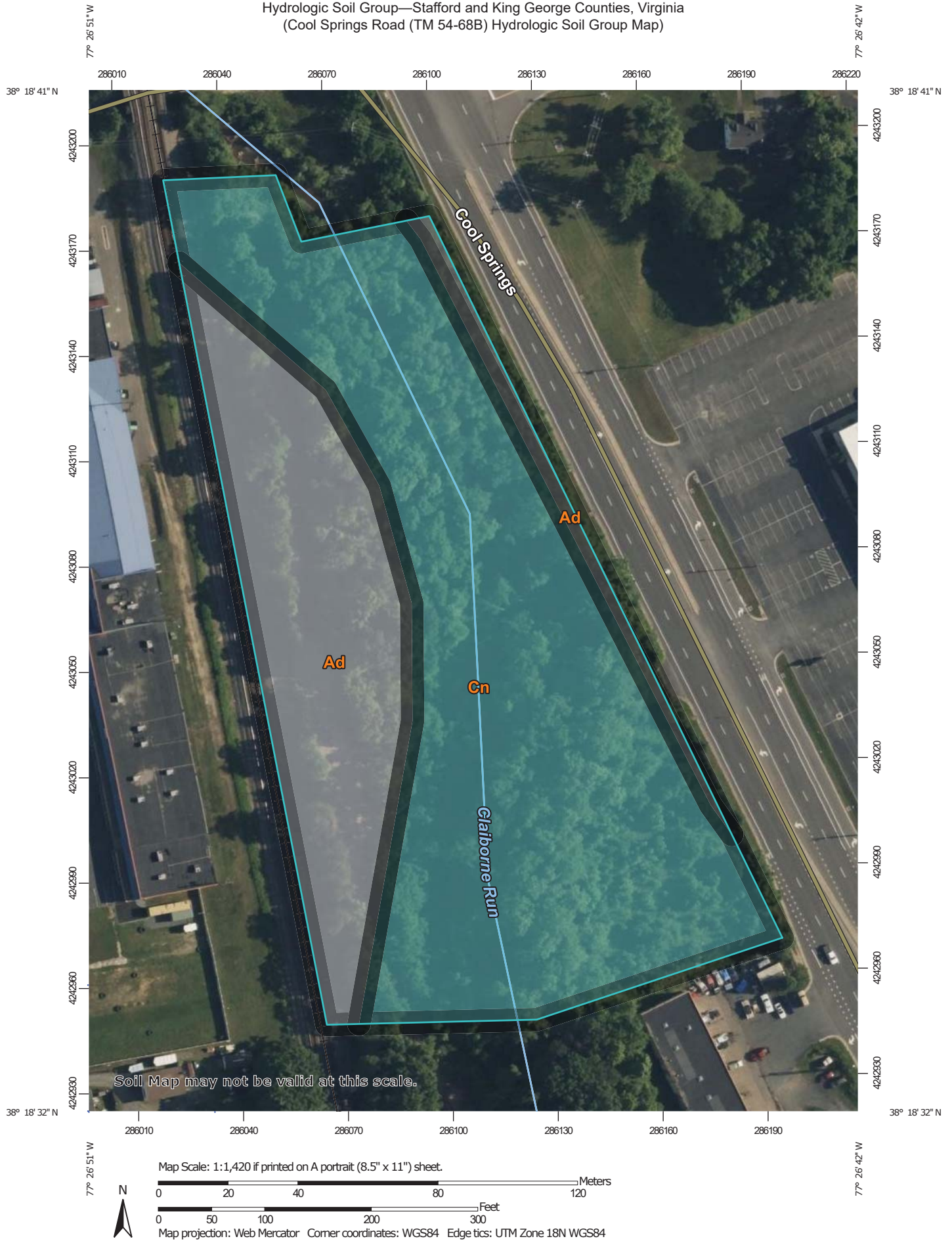
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Figure 4 – Soils Data

Hydrologic Soil Group—Stafford and King George Counties, Virginia
(Cool Springs Road (TM 54-68B) Hydrologic Soil Group Map)



Hydrologic Soil Group—Stafford and King George Counties, Virginia
(Cool Springs Road (TM 54-68B) Hydrologic Soil Group Map)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Stafford and King George Counties, Virginia
 Survey Area Data: Version 19, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 29, 2022—Jul 11, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ad	Alluvial land, sandy and gravelly		1.9	31.6%
Cn	Congaree loam	C	4.1	68.4%
Totals for Area of Interest			6.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Figure 5 – Photos



Cool Springs Road (TM 54-68B) - Wetland Delineation Photos (November 20, 2023)



Photograph 1 – View of DP 1-1-1 soils



Photograph 2 – View looking downslope of DP 1-1-1



Photograph 3 – View looking upstream of wetland pocket in location of flag AA1-W1



Photograph 4 – View looking downstream of wetland pocket in location of flag AA1-W1



Photograph 5 – View of DP 1-1-2 soils



Photograph 6 – View looking downslope of DP 1-1-2



Photograph 7 – View of DP 1-1-3 soils



Photograph 8 – View looking downslope of DP 1-1-3



Photograph 9 – View of DP 1-2-1 soils



Photograph 10 – View looking downslope of DP 1-2-1



Photograph 11 - View of DP 1-3-1 soils



Photograph 12 – View looking downslope of DP 1-3-1



Photograph 13 – View looking upstream of wetland pocket in location of flag A15-W12



Photograph 14 - View of DP 1-3-2 soils



Photograph 15 – View looking downslope of DP 1-3-2



Photograph 16 - View of DP 1-4-2 soils



Photograph 17 – View looking downslope of DP 1-4-2



Photograph 18 – View looking downstream of wetland pocket in location of flag C19/C10-W11



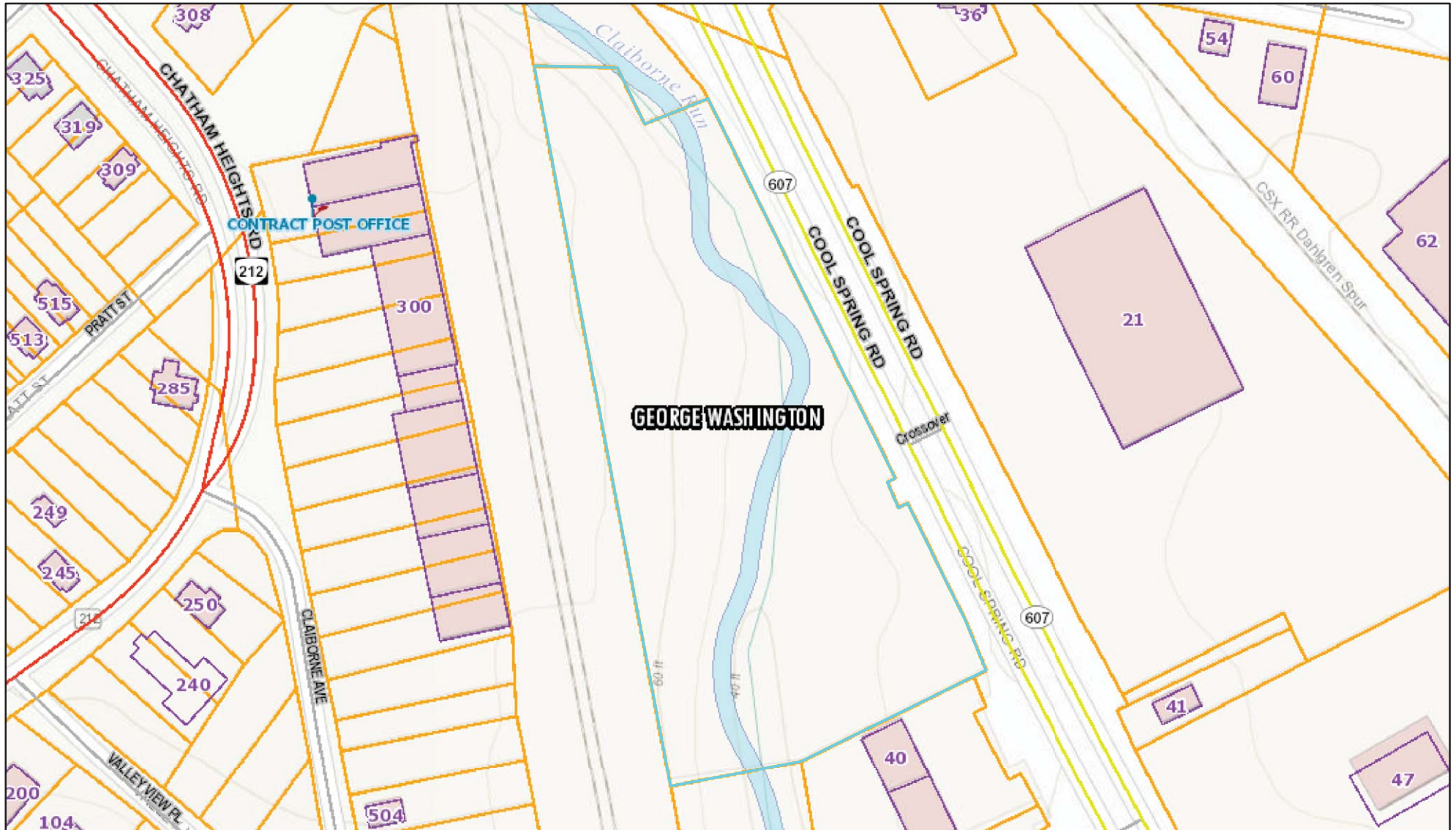
Photograph 19 - View of DP 1-5-1 soils



Photograph 20 – View looking downslope of DP 1-5-1

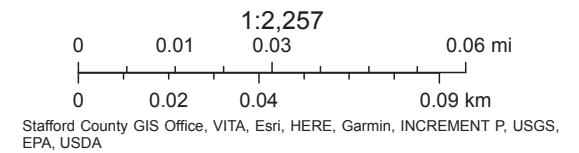
Figure 6 – Map of Site

Cool Springs Road (TM54-68B) Stafford GIS



12/12/2023, 3:23:32 PM

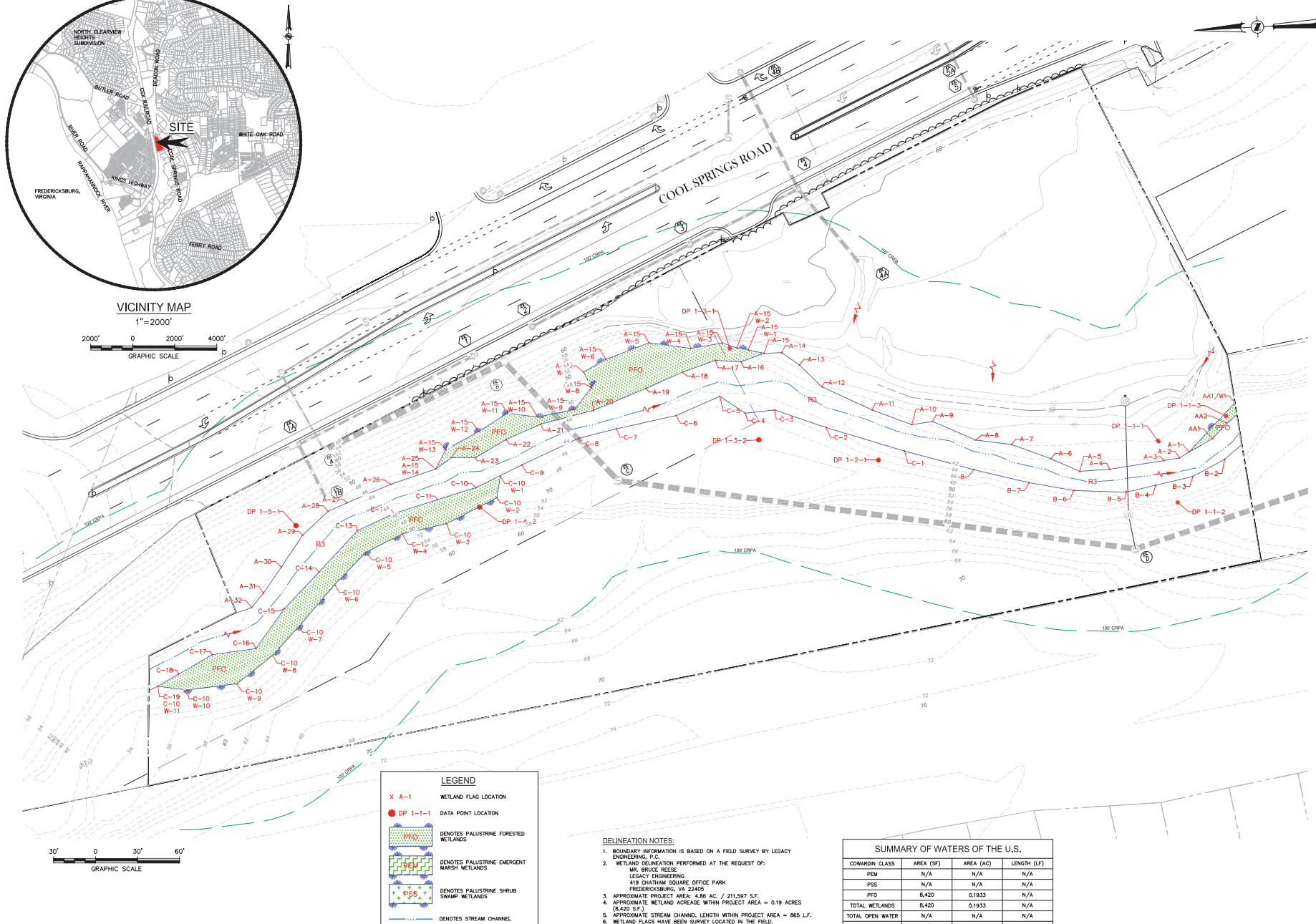
- | | | | | |
|---------------------------|-----------------------|-----------------|-----------------------|---------------------|
| Points of Interest | Train Stations | Public Schools | Secondary | US Route (Business) |
| Trails | Libraries | Structures | Secondary Major | US Route |
| Stafford Regional Airport | County Administration | Quantico Roads | VA Primary (Business) | Interstate Ramps |
| Stafford Hospital | Community Facilities | Secondary Minor | VA Primary | Interstate |





VICINITY MAP

1"=2000'



LEGEND

- X A-1 WETLAND FLAG LOCATION
- DP 1-1-1 DATA POINT LOCATION
- [Pattern] DENOTES PALUSTRINE FORESTED WETLANDS
- [Pattern] DENOTES PALUSTRINE EMERGENT MARSH WETLANDS
- [Pattern] DENOTES PALUSTRINE SHRUB SWAMP WETLANDS
- [Line] DENOTES STREAM CHANNEL

DELINEATION NOTES:

1. BOUNDARY INFORMATION IS BASED ON A FIELD SURVEY BY LEGACY ENGINEERING, P.C.
2. WETLAND DELINEATION PERFORMED AT THE REQUEST OF: MR. BRUCE REISE, LEGACY ENGINEERING, 419 CHATHAM SQUARE OFFICE PARK, FREDERICKSBURG, VA 22405
3. APPROXIMATE PROJECT AREA: 4.86 AC. / 211,597 S.F.
4. APPROXIMATE WETLAND ACREAGE WITHIN PROJECT AREA = 0.19 ACRES (8,420 S.F.)
5. APPROXIMATE STREAM CHANNEL LENGTH WITHIN PROJECT AREA = 865 L.F.
6. WETLAND FLAGS HAVE BEEN SURVEY LOCATED IN THE FIELD.

SUMMARY OF WATERS OF THE U.S.

COWARDIN CLASS	AREA (SF)	AREA (AC)	LENGTH (LF)
PEM	N/A	N/A	N/A
PSS	N/A	N/A	N/A
PFO	8,420	0.1933	N/A
TOTAL WETLANDS	8,420	0.1933	N/A
TOTAL OPEN WATER	N/A	N/A	N/A
TOTAL STREAMS	N/A	N/A	865

P.O. BOX 671
FREDERICKSBURG, VIRGINIA 22404
1025 COUNTRY DRIVE
FREDERICKSBURG, VIRGINIA 22408
TELEPHONE: 540-360-0000
FAX: 540-360-0001
WWW.MWEGROUP.COM



COOL SPRINGS ROAD TM 51468B
GEORGE WASHINGTON MASTERPLAN DISTRICT
STAFFORD COUNTY, VIRGINIA

DATE REVISIONS

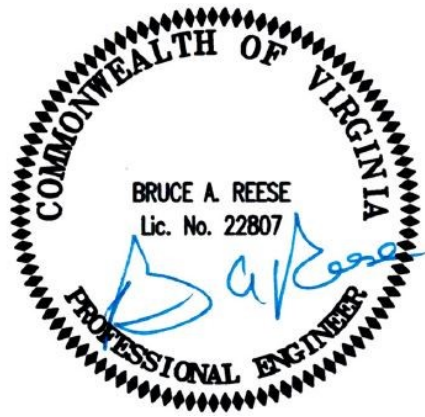


DESIGNED BY M/W
DRAWN BY JMK
CHECKED BY M/W
APPROVED BY M/W
JOB NO. R23-ST-0012
DATE 01-31-2024
SCALE
SHEET

ATTACHMENT 2
WATER QUALITY IMPACT ASSESSMENT

MAJOR WATER QUALITY IMPACT ASSESSMENT
FOR
CHATHAM INDUSTRIAL PARK - MBULU
TRANSPORT

October 31, 2024



PREPARED BY:



641 Prince Edward Street
Fredericksburg, VA 22401

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

Table of Contents

- I) Project Description
- II) Purpose
- III) CRPA Impact
- IV) Minor Water Quality Impact Assessment
- V) Major Water Quality Impact Assessment

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

I) Project Description

The Cool Springs Road development is located in Stafford County, VA on parcel number 54-68B. The site totals 4.858 acres and is zoned as M-1. The Site Plan layout proposes a small building with a single stall for tractor-trailer repair, a parking lot for fleet parking, and related infrastructure.

The site is located off of Cool Springs Road. This site is within FEMA Zone X, which is defined as 0.2% annual flood chance annually, and FEMA Zone AE, which is defined as a "regulatory floodway" per FIRM map #51179C0212F, dated June 21, 2023.

Resource Protection Area (RPA) has been delineated and shown on the attached WQIA Exhibit. The RPA, as delineated, will have 12,779 square feet, or 0.293 acres, impacted during development for the construction of the parking lot entrance, a portion of the lot and its associated grading, and a small corner of the building. This accounts for 6.0% of the entire site area. As 76.7% of the lot is contained within RPA, it is requested that this development be permitted as a Special Exception under Stafford County code 27B-14.

II) Purpose

A Water Quality Impact Assessment (WQIA) is required by Stafford County in order to disturb any portion of the one hundred-foot RPA buffer area, in accordance with section 9VAC25-830-140 of the Chesapeake Bay Preservation Area Designation and Management Regulations.

III) RPA Impacts

A small portion of RPA area necessitates clearing for the construction of the parking lot entrance and a small portion of the lot and its associated grading. The majority of the cleared area will be revegetated once construction is complete.

IV) Minor Water Quality Impact Assessments

Information required in a minor water quality impact assessment per Sec. 27B-1.c of the County Code:

- 1) *Location of the components of the CRPA, including the one hundred-foot buffer area:*
The site has a stream, Claiborne Run, and wetlands along the eastern boundary of the site. The RPA is shown on the attached WQIA Exhibit.
- 2) *Location and nature of the proposed encroachment into the buffer area, including: type of paving material; areas of clearing or grading; location of any structures, drives, or other impervious cover; and sewage disposal systems or reserve drain field sites:*

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

The paved entrance, a portion of the paved lot, and a small corner of the building are within the landward 50' of the buffer area, totaling 11,784 square feet. Two storm drainage outfall pipes and the sanitary connection to the existing network are within the seaward 50'. This area totals 2,840 square feet and will be revegetated once construction is complete. There are no drainfield or sewage systems proposed in the buffer area. The limits of clearing are shown on the attached WQIA Exhibit.

3) *Type and location of proposed BMPs to mitigate the proposed encroachment:*

During construction, the minimal associated clearing and grading area will utilize super silt fence downslope of the disturbed area to protect downstream areas from erosion.

Once construction is complete, the area cleared for grading will be revegetated.

Additionally, a Hydrodynamic MTD will treat all stormwater runoff that leaves the site.

This will provide a 20% P removal for the entire paved area on site and some offsite water that currently enters the RPA.

4) *Location of existing on-site vegetation, including the number and type of trees and other vegetation to be removed in the buffer area to accommodate the encroachment or modification:*

Existing vegetation has been shown through aerial imagery on the attached WQIA Exhibit. No new trees are proposed as the site is fully forested and remaining trees will be left undisturbed and used as forested open space.

5) *A re-vegetation plan that supplements the existing buffer area vegetation in a manner that provides for pollutant removal, erosion and runoff control:*

The area cleared for grading will be revegetated immediately following construction. The trees removed where permanent structures are being installed will be mitigated by leaving the majority of the remaining property undisturbed as forested open space in or adjacent to the buffer.

V) Major Water Quality Impact Assessments

Information required in a major water quality impact assessment includes:

- 1) All of the information required in a minor water quality impact statement.
- 2) A hydrogeological element which shall:
 - a. *Describes the existing topography, soils, hydrology, and geology of the site and adjacent lands:*

This residential lot consists of 4.858 acres. The topography ranges from elevation 65' along the western edge of the site to an elevation of 52' along the top of the bank of Claiborne Run. Runoff from the site flows towards the existing stream and wetlands.

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

The onsite soil consists of primarily Conagree loam with Alluvial land, sandy and gravelly, along the eastern and western edges of the property. The soil in the proposed disturbance area is Conagree loam, which is of Hydrologic Soil Group C and is well drained according to the published Web Soil Survey.

The site is bordered by Cool Springs Rd to the east, commercial businesses to the south, Stafford owned wetlands to the north, and a railroad to the west.

- b. *Describe the impacts of the proposed development on topography, soils, hydrology and geology on the site and adjacent lands:*

The soils and geology will not be impacted with this proposed development as the final site grading has been balanced so that no offsite fill is required. Changes to the topography will be minor as the existing topography is very flat with slopes to the west and the proposed development will maintain that. Additionally, the hydrology will remain very similar to the existing as the site currently drains to Claiborne Run and will continue to do so. All grading and hydrology for the development and will be accounted for in the Site plan, which requires County approval.

- c. *Indicate the following:*

1. *Disturbance or destruction of wetlands in RPAs and justification for such action:*

There is no wetland disturbance proposed with this plan.

2. *Disruptions or reductions in the supply of water to wetland, streams, lakes, rivers, or other water bodies:*

There is no reduction in water supply anticipated with this project.

3. *Disruptions to existing hydrology including wetland and stream circulation patterns:*

There is no change in the hydrology occurring with this as drainage divides are expected to remain largely the same.

4. *Description of proposed fill material:*

The site is designed to have a balanced cut and fill so no off-site fill is anticipated.

5. *Location of dredging and location of dumping area for such dredged material:*

There will be no dredging with this project.

6. *Estimation of pre- and post-development pollutant loads in runoff:*

A VRRM spreadsheet has been completed for the disturbed area in the RPA. This area was found to require 0.36 lb/yr Phosphorus removal. Applying a 20% removal rate to the area that enters the storm system provided a P removal of 0.38 lb/yr, which exceeds that which is required to restore the RPA. See the attached WQIA Exhibit for more information.

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

7. *Estimation of percent increase in impervious surface on site, type(s) of surfacing material used:*

The pre-development percent impervious surface onsite is 0%. This proposed infrastructure project has a post-development percent impervious area of 13.8% of the total parcel acreage. The surface materials used include various roofing materials, concrete, pavement, and gravel.

8. *Percent of site to be cleared for project:*

15.6% of the property will be cleared for this development. The RPA disturbance is equivalent to only 7.3% of the RPA onsite.

9. *Anticipated duration and phasing schedule of construction project:*

The construction of this building and associated infrastructure is estimated to take a year from the date of approval for full build out.

10. *List of all requisite permits from all applicable agencies necessary to develop project.*

A Construction General Permit from the VSMP Authority will be obtained prior to any land disturbance.

11. *Descriptions of the proposed mitigation measures for the potential hydrogeological impacts. Potential mitigation measures may include, but are not limited to:*

i. *Proposed erosion and sediment control concepts. Concepts may include minimizing the extent of the cleared area, perimeter controls, reduction of runoff velocities, measures to stabilize disturbed areas, and schedule and personnel for site inspection:*

Super silt fence will be used along the perimeter of the site and temporary stabilization will be applied when plausible to reduce the opportunity for erosion and sedimentation. The amount of disturbance in the RPA has been minimized to the greatest extent practicable.

ii. *Proposed stormwater management system:*

Stormwater runoff will enter a storm sewer system which will outfall into the existing floodplain. Final stormwater management will be accounted for in the Site plan, which requires County approval

iii. *Minimizing excavation and fill.*

The site has been graded to be balanced, requiring no offsite fill and minimal excavation.

3) *A landscape element for areas within CBPA's that:*

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

- a. *Identifies the general location of all significant onsite plant material. Where there are groups of trees, stands may be outlined:*

Vegetation is shown through aerial imagery and the treeline is outlined on the attached WQIA Exhibit.
 - b. *Describes the impacts the development or use will have on the existing vegetation. Information shall include:*
 1. *General limits of any clearing, based on all anticipated improvements including buildings, drives and utilities:*

Limits of clearing are shown on the attached WQIA Exhibit.
 2. *Clear delineation of all trees which will be removed:*

Limits of clearing and the treeline are shown on the attached WQIA Exhibit.
 3. *General description of any plant material to be disturbed or removed.*

There is a large variety of vegetation onsite consisting of hardwoods and grasses. The trees on site vary from mature trees to young saplings and consist of both evergreen and deciduous species.
 - c. *Describes the potential measures for mitigation. Possible mitigation measures may include, but are not limited to:*
 1. *Replanting schedule for vegetation removed for construction, including a list of possible planting materials to be used:*

Replantings proposed will be selected from Appendix A of the Department of Conservation and Recreation's Riparian Buffers Modification & Mitigation Guidance Manual. No canopy trees are proposed, but Redbuds and Dogwoods for understory trees, and Steeplebush and Mountain Laurel for small shrubs will be planted.

Demonstration that the design of the plan will preserve any significant vegetation on the site to the greatest extent possible:

This site plan has taken care to minimize the disturbance to the greatest extent possible and the majority of the remaining vegetated parcel will be placed will be left undisturbed and used as forested open space.
 2. *Demonstration that indigenous plants are to be used to the greatest extent possible.*

Plants recommended for use are present in neighboring areas and thus will maintain the existing ecosystem and increase the likelihood of survival for the proposed plantings. See the attached WQIA Exhibit for more info on the specific locations.
- 4) *A wastewater element, where applicable, that:*

Major Water Quality Impact Assessment

Chatham Industrial Park – Mbulu Transport

Legacy Engineering, P.C

October 31, 2024

- a. Includes calculations and locations of anticipated drainfield or wastewater irrigation areas:*

There are no drainfields or irrigation proposed with these improvements.
 - b. Provides justification for sewer line locations in CBPAs, where applicable, and describes construction techniques and standards:*

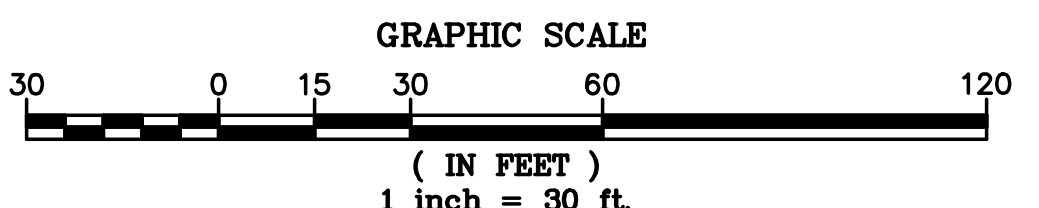
The existing sanitary sewer line is in the RPA. This development proposes the least possible area be disturbed for the adequate connection to the existing system.
 - c. Addresses any proposed on-site collection and treatment systems, their treatment levels, and impacts on receiving watercourses:*

A storm sewer system will collect all stormwater and treat it to remove Phosphorus through the use of a Hydrodynamic MTD before it outfalls at the floodplain of the stream to which the site was previously draining to. The MTD will require a Maintenance Agreement. This document states that the BMP needs to be maintained to ensure proper function and inspected at least once every 5 years, with an inspection report submitted to the County within 30 days of each inspection.
 - d. Describes the potential impacts of the proposed wastewater systems, including the proposed mitigation measures for these impacts.*

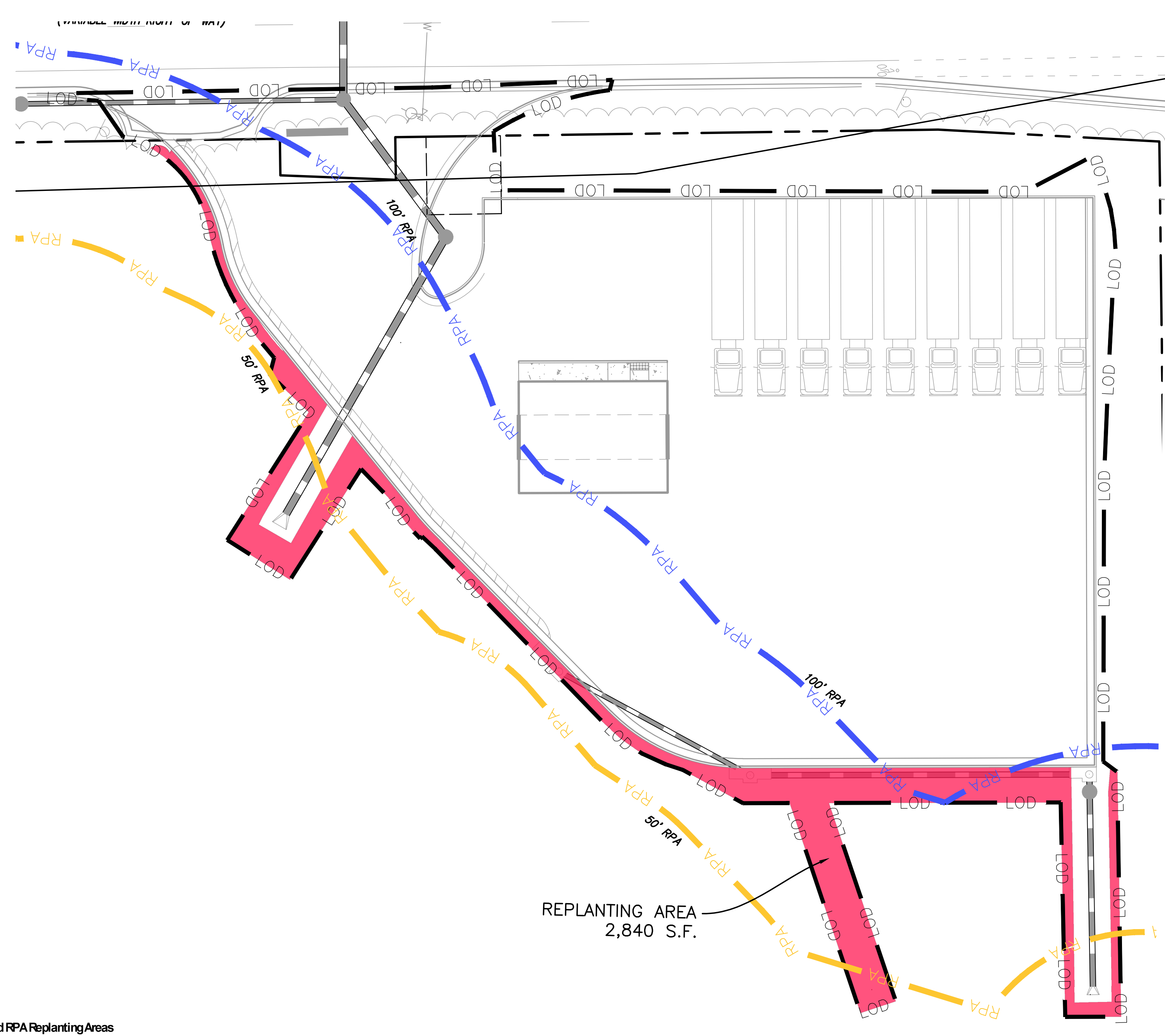
No impacts are anticipated as a result of this development as the site will continue to drain to the same area and the stream onsite will be protected through the use of undisturbed open space on the remainder of the property.
- 5) Identification of the existing characteristics and conditions of sensitive lands included as components of CRPAs, as defined in this chapter.*

The RPA components consist of a stream running through the center of the site. This is shown on the attached WQIA Exhibit.
- 6) A general identification of the natural processes and ecological relationships inherent in the site, and an assessment of the impact of the proposed use and development of land on these processes and relationships.*

In the pre-developed condition, the site's runoff flows towards the center of the parcel where the RPA has been delineated. In the post-developed condition, the developed portion of the site drains to 2 point discharges that outfall into the floodplain of the same stream in accordance with 9VAC25-870.



FILE NO. 8378	SHEET 1 OF 3
DATE 10/17/2024	
SCALE 1"=30'	



LEGEND



* REPLANTINGS PROPOSED WILL BE SELECTED FROM APPENDIX A OF THE DEPARTMENT OF CONSERVATION AND RECREATION'S RIPARIAN BUFFERS MODIFICATION & MITIGATION GUIDANCE MANUAL.

NOTE: THIS LANDSCAPING PLAN IS UNABLE TO INCLUDE LARGE CANOPY TREES DUE TO THE UTILITIES AND EASEMENTS AROUND THE SITE. PLANTS TO BE USED ARE INCLUDED BELOW:

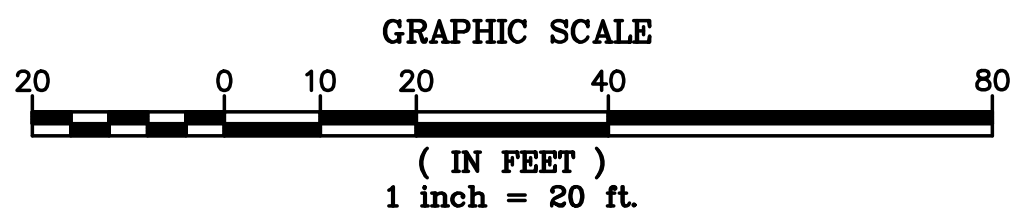
UNDERSTORY DECIDUOUS TREES

BOTANICAL NAME	COMMON NAME
CERCIS CANADENSIS	REDBUD
CORNUS FLORIDA	DOGWOOD

SMALL DECIDUOUS SHRUBS

BOTANICAL NAME	COMMON NAME
SPIRAEA TOMENTOSA	STEEPLEBUSH
KALMIA LATIFOLIA	MOUNTAIN LAUREL

	Disturbed RPA Replanting Areas			
	Landward		Seaward	
	Square Feet	Acres	Square Feet	Acres
Total Area Disturbed	11,784	0.2705	995	0.0230
Area to be Replanted	2,215	0.0508	625	0.0116
Permanent Disturbance	9,569	0.2197	370	0.0114





LEGACY
ENGINEERING

641 PRINCE EDWARD STREET
FREDERICKSBURG, VA 22401
www.legacy-eng.com
540.373.8350 (p)

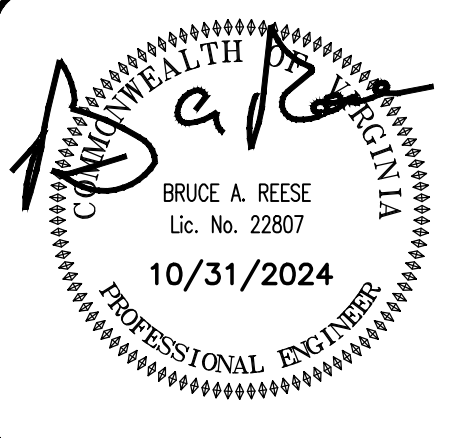
MAJOR SITE PLAN

EDGE CAR WASH

WQIA EXHIBIT

ROCK HILL MAGISTERIAL DISTRICT
STAFFORD COUNTY, VA

10/31/24	REVISED PER COUNTY COMMENTS	REVIEW STATUS	NO
DATE			
DATE		REVISION	



BRUCE A. REESE
Lic. No. 22807
10/31/2024
PROFESSIONAL ENGINEER

FILE NO. 8378	SHEET 2
DATE 10/17/2024	OF 3
SCALE 1"=20'	

DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

2011 BMP Standards and Specifications

2013 Draft BMP Standards and Specifications

Project Name: Cool Springs - RPA Disturbance

Date: 10/17/2024

CLEAR ALL

(Ctrl+Shift+R)

data input cells

constant values

calculation cells

final results

BMP Design Specifications List: 2013 Draft Stds & Specs

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed			0.09		0.09
Impervious Cover (acres)			0.20		0.20
					0.29

AREA OF DISTURBANCE IN THE RPA

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

PHOSPHORUS REMOVAL REQUIREMENT FOR THE DISTURBANCE IN THE RPA

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	0.36
------------------------------------	------

DEQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

2011 BMP Standards and Specifications

2013 Draft BMP Standards and Specifications

Project Name: Cool Springs - MTD

Date: 10/17/2024

BMP Design Specifications List: 2013 Draft Stds & Specs

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed					0.00
Impervious Cover (acres)			0.71	0.17	0.88
					0.88

AREA TREATED BY THE HYDRODYNAMIC MTD

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)					0.00	0.00
Impervious Cover (acres)			0.71	0.17	0.88	0.95
Total					0.88	

Total Phosphorus Available for Removal in D.A. A (lb/yr)

1.91

Post Development Treatment Volume in D.A. A (ft³)

3,035

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft ³)	Runoff Reduction (ft ³)	Remaining Runoff Volume (ft ³)	Total BMP Treatment Volume (ft ³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
14. Manufactured Treatment Devices (no RR)													
14.a. Manufactured Treatment Device- Hydrodynamic	0		0.88	0	0	3,035	3,035	20	0.00	1.90	0.38	1.52	
14.b. Manufactured Treatment Device- Filtering	0			0	0	0	0	20	0.00	0.00	0.00	0.00	
14.c. Manufactured Treatment Device- Generic	0			0	0	0	0	20	0.00	0.00	0.00	0.00	

PHOSPHORUS REMOVAL OF 20% USED FOR A HYDRODYNAMIC DEVICE PER SWM HANDBOOK SECTION 8.4.1.2

TOTAL IMPERVIOUS COVER TREATED (ac)	0.88	AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr)	1.55	
TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	1.91	
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.38	
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00	
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr)	0.38	
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr)	1.53	

PHOSPHORUS REMOVAL PROVIDED BY MTD (EXCEEDS REQUIREMENT BY 0.02 LB/YR)

LEGEND

- UNDISTURBED SEAWARD 50' RPA (2.44 AC)
- DISTURBED SEAWARD 50' RPA (995 SF; 0.0228 AC)
- UNDISTURBED LANDWARD 50' RPA (0.99 AC)
- DISTURBED LANDWARD 50' RPA (11,784 SF; 0.2705 AC)
- AREA TO MTD (0.88 AC)

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

PHOSPHORUS REMOVAL NARRATIVE:

THE PHOSPHORUS REMOVAL REQUIREMENT LISTED IN THE TOP VRRM IS ONLY BASED ON THE AREA OF THE DISTURBANCE WITHIN THE RPA, 0.29 ACRES. THIS IS TO PROVIDE THE WATER QUALITY TREATMENT LOST WITH THIS DEVELOPMENT. THE AREA USED IN THE SECOND VRRM, 0.88 ACRES, IS THE TOTAL AREA ENTERING THE MTD THROUGH THE STORM SEWER SYSTEM. THIS AREA INCLUDES THE MAJORITY OF THE SITE AND SOME OFFSITE AREA. WHEN THIS AREA IS TREATED BY THE HYDRODYNAMIC DEVICE, 0.38 LB/YR OF PHOSPHORUS IS REMOVED FROM THE RUNOFF. THIS AMOUNT EXCEEDS THAT WHICH IS REQUIRED FOR THE DISTURBANCE IN THE RPA BY 0.02LB/YR.

LEGACY ENGINEERING

641 PRINCE EDWARD STREET
FREDERICKSBURG, VA 22401
www.legacy-eng.com
540.373.8350 (p)

MAJOR SITE PLAN

EDGE CAR WASH

WQIA EXHIBIT

ROCK HILL MAGISTERIAL DISTRICT
STAFFORD COUNTY, VA

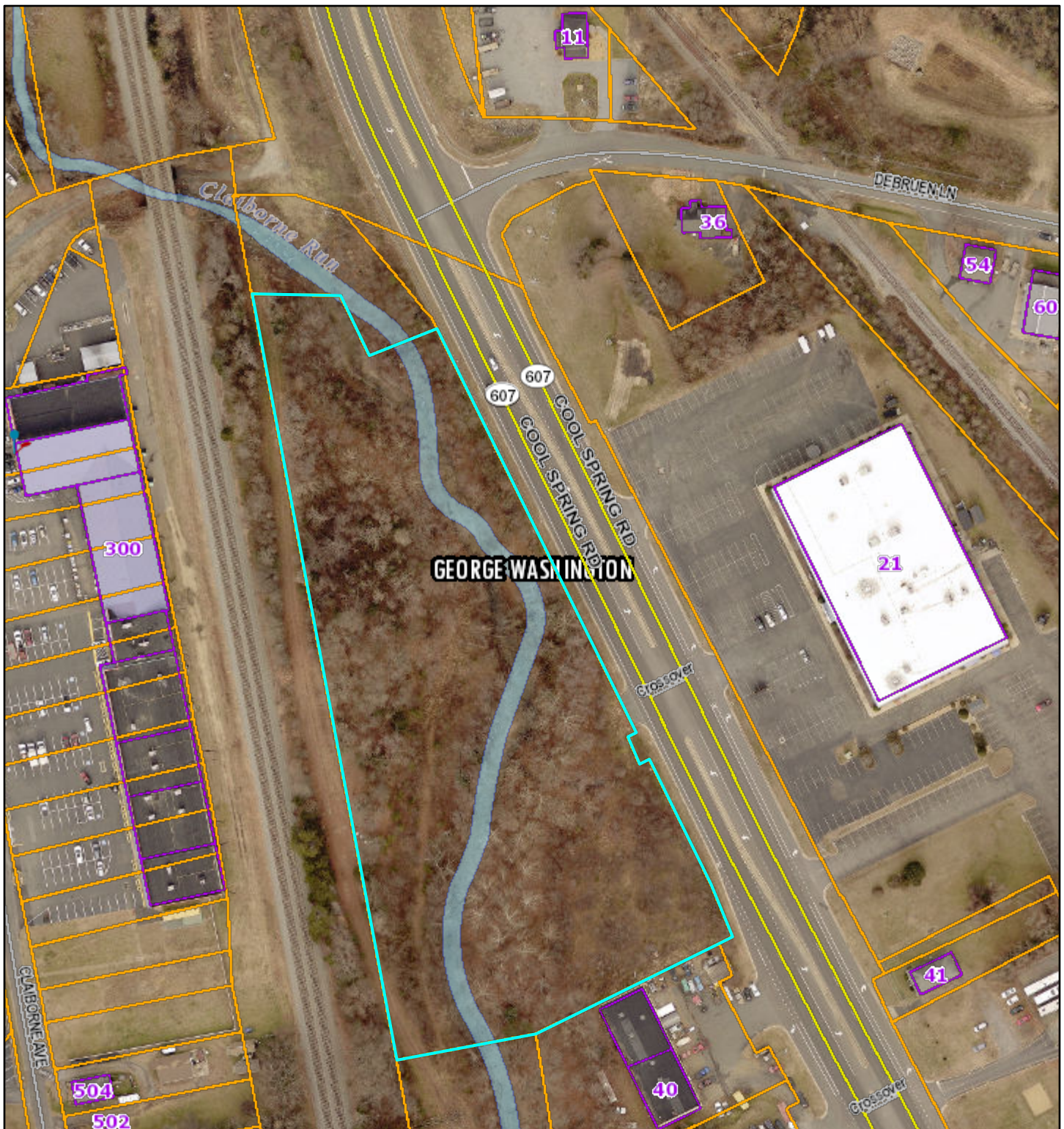
10/31/24	REVISED PER COUNTY COMMENTS	REVIEW STATUS	NO
DATE			
DATE		REVISION	

BRUCE A. REESE
Lic. No. 22807
10/31/2024
PROFESSIONAL ENGINEER

FILE NO. 8378	SHEET 3
DATE 10/17/2024	OF 3
SCALE 1"=30'	

ATTACHMENT 3
2024 VICINITY MAP
2013 HISTORICAL AERIAL MAP
2024 PICTOMETRY MAP

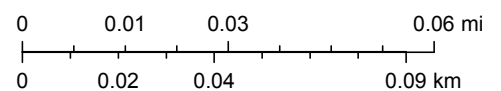
2024 Aerial (Tax Map Parcel- 54-68B)



10/29/2024, 3:37:45 PM

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- | | | |
|---------------------------|-----------------------|-----------------------|
| Points of Interest | County Administration | Secondary Major |
| Trails | Community Facilities | VA Primary (Business) |
| Stafford Regional Airport | Public Schools | VA Primary |
| Stafford Hospital | Structures | US Route (Business) |
| Train Stations | Quantico Roads | US Route |
| Libraries | Secondary Minor | Interstate Ramps |
| | Secondary | Interstate |

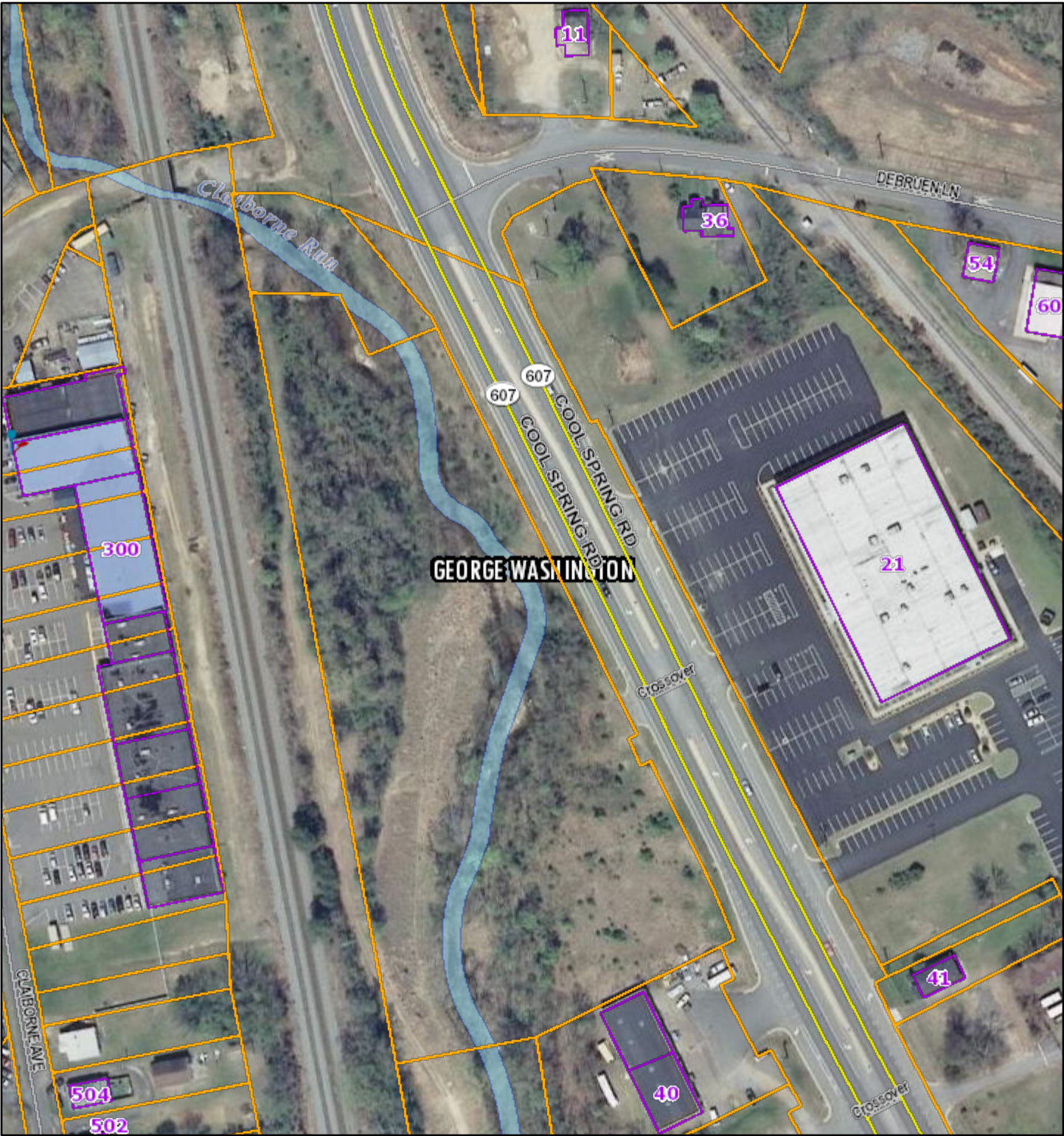


Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Spotsylvania County GIS, Stafford County GIS Office, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph,

Data from the Stafford County GIS Office

Virginia Geographic Information Network (VGIN) | VGIN | Esri Community Maps Contributors, Spotsylvania County GIS, Stafford County GIS Office, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom,

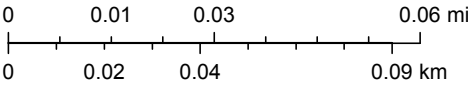
2013 Historical Aerial (Tax Map Parcel- 54-68B)



10/29/2024, 3:55:33 PM

1:2,257

- | | | |
|---------------------------|-----------------------|-----------------------|
| Points of Interest | County Administration | Secondary Major |
| Trails | Community Facilities | VA Primary (Business) |
| Stafford Regional Airport | Public Schools | VA Primary |
| Stafford Hospital | Structures | US Route (Business) |
| Train Stations | Quantico Roads | US Route |
| Libraries | Secondary Minor | Interstate Ramps |
| | Secondary | Interstate |



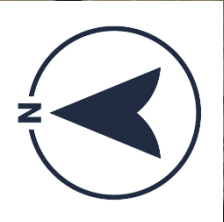
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Data from the Stafford County GIS Office

2023 PICTOMETRY VEIW (Tax Map # 54-68B)



Not To Scale



ATTACHMENT 4
ADJACENT PROPERTY OWNER NOTIFICATION

Adjacent Property Owners

To Whom It May Concern
CSX TRANSPORTATION INC
500 WATER ST
JACKSONVILLE FL 32202-4445

COUNTY OF STAFFORD
PO BOX 339
STAFFORD VA 22555-0339

THE ATKINS COMPANY LLC
115 CARROLL CIR
FREDERICKSBURG VA 22405-3113

FRATERNAL ORDER OF EAGLES FREDERICKS
21 COOL SPRINGS ROAD
FREDERICKSBURG VA 22405-2600

STAR II LLC
108 CARROLL CIR
FREDERICKSBURG VA 22405-3113



October 24, 2024

To Whom It May Concern
The Atkins Company LLC
115 Carroll Circle
Fredericksburg, Virginia 22405

NOTICE OF PUBLIC HEARING

Subject: ***AP24155970; Stafford Count Chesapeake Bay Board Special Exception Application, CBB24-05; Chatham Industrial Park -Mbulu; Tax Map Parcel No. 54-68B; within the George Washington Election District***

The Stafford County Chesapeake Bay Board will hold a public hearing on Monday, November 18, 2024, beginning at 6:00 p.m. or as soon thereafter as the matter may be heard, in the George L. Gordon, Jr., Government Center, 1300 Courthouse Road. The hearing will consider the request of Mr. Victor Mbulu for approval of a Stafford County Chesapeake Bay Board Special Exception on Tax Map Parcel No. 54-68B. The parcel is an undeveloped property located along the west side of Cool Spring Road just south of the intersection with Debruen Lane. The purpose of the request is to construct a semi-tractor trailer parking lot, repair garage, and an access aisle to garage which will be within the Chesapeake Bay Resource Protection Area (RPA) buffer.

All interested parties are invited to appear at the above designated time and place and state their views. Persons requiring special accommodations to facilitate participation in the above matter are encouraged to contact the Department of Development Services at least five days prior to the meeting.

The public hearing may be continued or adjourned. A copy of the application and other related materials are on file in the Department of Development Services located at 2128 Richmond Highway, Suite 201, Stafford, Virginia 22554, and may be examined Monday through Friday between the hours of 8:00 a.m. and 4:30 p.m.

If you have any questions or concerns regarding this matter, please contact Joseph Fiorello at (540) 658-8689.

Sincerely,

Joseph Fiorello, PWS, CPWD, CA
Environmental Planner

JPF:EAT: PS



October 24, 2024

To Whom It May Concern
CSX Transportation Inc
500 Water Street
Jacksonville, Florida 32202

NOTICE OF PUBLIC HEARING

Subject: ***AP24155970; Stafford Count Chesapeake Bay Board Special Exception Application, CBB24-05; Chatham Industrial Park -Mbulu; Tax Map Parcel No. 54-68B; within the George Washington Election District***

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If you have any questions or concerns regarding this matter, please contact Joseph Fiorello at (540) 658-8689.

Sincerely,

Joseph Fiorello, PWS, CPWD, CA
Environmental Planner

JPF:EAT: PS



October 24, 2024

To Whom It May Concern
Fraternal Order of Eagles Fredericks
21 Cool Spring Road
Fredericksburg, Virginia 22405

NOTICE OF PUBLIC HEARING

Subject: ***AP24155970; Stafford Count Chesapeake Bay Board Special Exception Application, CBB24-05; Chatham Industrial Park -Mbulu; Tax Map Parcel No. 54-68B; within the George Washington Election District***

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Sincerely,

Joseph Fiorello, PWS, CPWD, CA
Environmental Planner

JPF:EAT: PS



October 24, 2024

To Whom It May Concern
STAR II, LLC
108 Carrol Circle
Fredericksburg, Virginia 22405

NOTICE OF PUBLIC HEARING

Subject: ***AP24155970; Stafford Count Chesapeake Bay Board Special Exception Application, CBB24-05; Chatham Industrial Park -Mbulu; Tax Map Parcel No. 54-68B; within the George Washington Election District***

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If you have any questions or concerns regarding this matter, please contact Joseph Fiorello at (540) 658-8689.

Sincerely,

Joseph Fiorello, PWS, CPWD, CA
Environmental Planner

JPF:EAT: PS

ATTACHMENT 5
PROPOSED RESOLUTIONS

CHEAPEAKE BAY BOARD
COUNTY OF STAFFORD
STAFFORD, VIRGINIA

SPECIAL EXCEPTION RESOLUTION

At a regular meeting of the Stafford County Chesapeake Bay Board held in the Board of Supervisors Chambers, Stafford County Administration Center, Stafford, Virginia, on the 18th day of November 2024:

<u>MEMBERS:</u>	<u>VOTE:</u>
Sue Henderson	_____
Mary Rust	_____
Anthony Pineau	_____
Benjamin Rudasill	_____
Dan Adams	_____
Robert Hayden	_____
Zachary Martinez	_____

On the motion of ____, seconded by ____, which carried by a vote of ____ to ____, the following was adopted:

A RESOLUTION WHICH APPROVES AN APPLICATION FOR A SPECIAL EXCEPTION PURSUANT COUNTY CODE SECTION 27B-14 ENTITLED "SPECIAL EXCEPTIONS" TO ALLOW DISTURBANCE OF A CRITICAL RESOURCE PROTECTION AREA (CRPA) ON TAX MAP PARCEL 54-68B, GEORGE WASHINGTON ELECTION DISTRICT

WHEREAS, the Stafford County Chesapeake Bay Board received application 24155970 from Mr. Victor Mbulu to allow clearing and grading within the landward 50 feet of the CRPA to construct a tractor trailer maintenance and repair shop, drive aisle, site entrance, and associated utilities; and

WHEREAS, the Stafford County Chesapeake Bay Board has authority under County Code Section 27B-14 to issue an exception for land disturbance activities in a CRPA; and

WHEREAS, Mr. Victor Mbulu has applied for an exception to County Code Section 27B-7, entitled "Development Conditions"; and

WHEREAS, the Stafford County Chesapeake Bay Board has given proper notice of a public hearing as required by the Code of Virginia (1950), as amended, and the Stafford County Code; and

WHEREAS, the Stafford County Chesapeake Bay Board after due consideration of the facts of the application and testimony at the public hearing finds the following;

- (1) Granting the special exception will not confer upon the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
- (2) The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;
- (3) The special exception request is the minimum necessary to afford relief;

- (4) The special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
- (5) Reasonable and appropriate conditions can be imposed which will prevent the special exception request from causing a degradation of water quality; and

NOW, THEREFORE, BE IT RESOLVED by the Stafford County Chesapeake Bay Board on this the 18th day of November 2024, that exceptions to County Code Section 27B-7, entitled “Development conditions” pursuant to application 24155970 be and it hereby is approved with the following conditions:

- 1. The limits of the CRPA buffer encroachments shall be as shown in the WQIA Exhibit dated October 31, 2024, submitted with the Special Exception Application, Attachment 2 of the Staff Report.
- 2. Mitigation for the encroachment into the CRPA must be consistent with the re-vegetation areas proposed in the WQIA exhibit and proposed stormwater Hydrodynamic MTD that will treat all stormwater runoff that leaves the site having a 20% phosphorus removal rate.
- 3. Design plans to be approved by Stafford County Planning and Zoning and Development Services will include the re-vegetation areas, planting details, species list, and stormwater management mitigation practices presented here in the WQIA. Should design plans change, the applicant is required to contact Stafford County Environmental Staff.
- 4. The applicant is to ensure the required plantings survive and are in good health in perpetuity. If any of the plantings die they are to be replaced in kind.
- 5. This resolution, CBB-24-05 for the tractor trailer maintenance and repair shop, drive aisle, site entrance, and associated utilities on Tax Map Parcel 54-68B is valid for 1 year and will expire November 18, 2025.

Sue Henderson
Chesapeake Bay Board Chairman

JPF:ET

CHEAPEAKE BAY BOARD
COUNTY OF STAFFORD
STAFFORD, VIRGINIA

SPECIAL EXCEPTION RESOLUTION

At a regular meeting of the Stafford County Chesapeake Bay Board held in the Board of Supervisors Chambers, Stafford County Administration Center, Stafford, Virginia, on the 18th day of November 2024:

<u>MEMBERS:</u>	<u>VOTE:</u>
Sue Henderson	_____
Mary Rust	_____
Anthony Pineau	_____
Benjamin Rudasill	_____
Dan Adams	_____
Robert Hayden	_____
Zachary Martinez	_____

On the motion of _____, seconded by _____, which carried by a vote of __ to __, the following was adopted:

A RESOLUTION WHICH DENIES AN APPLICATION FOR A SPECIAL EXCEPTION PURSUANT COUNTY CODE SECTION 27B-14 ENTITLED “SPECIAL EXCEPTIONS” TO ALLOW DISTURBANCE OF A CRITICAL RESOURCE PROTECTION AREA (CRPA) ON TAX MAP PARCEL 54-68B, GEORGE WASHINGTON ELECTION DISTRICT

WHEREAS, the Stafford County Chesapeake Bay Board received application 24155970 from Mr. Victor Mbulu to allow clearing and grading within the landward 50 feet of the CRPA to construct a tractor trailer maintenance and repair shop, drive aisle, site entrance, and associated utilities; and

WHEREAS, the Stafford County Chesapeake Bay Board has authority under County Code Section 27B-14 to issue an exception for land disturbance activities in a CRPA; and

WHEREAS, Mr. Victor Mbulu has applied for an exception to County Code Section 27B-7, entitled “Development conditions”; and

WHEREAS, the Stafford County Chesapeake Bay Board has given proper notice of a public hearing as required by the Code of Virginia (1950), as amended, and the Stafford County Code; and

WHEREAS, the Stafford County Chesapeake Bay Board after due consideration of the facts of the application and testimony at the public hearing finds one or more of the following to be true:

- (1) Granting the special exception will confer upon the applicant(s) special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
- (2) The special exception request is based on conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;

- (3) The special exception request is not the minimum necessary to afford relief;
- (4) The special exception request will not be consistent with the purpose and intent of this chapter, injurious to the neighborhood or otherwise detrimental to the public welfare, and is of substantial detriment to water quality; and
- (5) Reasonable and appropriate conditions cannot be imposed which will prevent the special exception request from causing a degradation of water quality.

NOW, THEREFORE, BE IT RESOLVED by the Stafford County Chesapeake Bay Board on this the 18th day of November, 2024, that exceptions to County Code Section 27B-7, entitled “Development conditions”, pursuant to application 24155970 be and it hereby is denied.

Sue Henderson
Chesapeake Bay Board Chairman

JPF:ET

ATTACHMENT 6
MBULU TRANSPORTATION COMPANY
POWER POINT PRESENTATION



Chesapeake Bay Board

NOVEMBER 18, 2024

Stafford County Government

Agenda

- Call to Order
- Roll Call
- Determination of a Quorum
- Approval of Meeting Minutes
 - June 17, 2024
- Public Hearing
- CBB24-05 – AP24155970 – Mr. Victor Mbulu: Tractor Trailor Maintenance and Repair Shop
 - Application request to permanently impact at total of 10,309 sq. ft. (0.237-acre) and temporarily impact 2,470 sq. ft. (0.057-acre) of CRPA .

Chapter 27B: Section 27B-14 – Special Exceptions

- (a) In deciding whether to grant, grant in modified form or deny a special exception application, the board shall review the request for a special exception and the water quality impact assessment. The board may grant the special exception, with such conditions and safeguards as deemed necessary to further the purpose and intent of this chapter, if the board finds:
 - 1) Granting the special exception will not confer upon the applicant(s) any special privileges denied by this chapter to other property owners who are subject to its provisions and who are similarly situated;
 - 2) The special exception request is not based on any conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or nonconforming that are related to adjacent parcels;
 - 3) The special exception request is the minimum necessary to afford relief;
 - 4) The special exception request will be consistent with the purpose and intent of this chapter, not injurious to the neighborhood or otherwise detrimental to the public welfare, and is not of substantial detriment to water quality; and
 - 5) Reasonable and appropriate conditions are imposed which will prevent the special exception request from causing a degradation of water quality.
- (b) If the board denies the special exception, the board shall provide the applicant(s) with the board's written decision, including its rationale.

CBB24-05 – AP24155970 – Mbulu Tractor Trailor Maintenance and Repair Shop

- Request to:
 - Permanently impact 9,939 sq. ft. of landward 50 ft. CRPA.
 - Permanently impact 370 sq. ft. of seaward 50 ft. CRPA
 - Temporarily impact 1,845 sq. ft. of landward 50 ft. CRPA
 - Temporarily impact 625 sq. ft. of seaward 50 ft. CRPA
 - Permanent impacts will be mitigated via the stormwater hydrodynamic manufactured treatment device (MTD); having the same performance of the entire permanent impact area of the CRPA on site.
 - Temporary impact areas will be revegetated according to the Riparian Buffers Modification & Mitigation Guidance Manual.
 - Replanting details will be approved via the major site plan.
- Tax Map Parcel No: 54-68B
- Election District: George Washington



Background

- **Current Condition:**

The property is located on Tax Map Parcel 54-68B within the George Washington Election District. The property is zoned M1; was platted prior to the adoption of the Chesapeake Bay Act ordinances but was re-platted after a boundary line adjustment in May of 2021; and the property is currently vacant land. The property is bisected from north to south by the meandering channel of Claiborne Run and the CRPA. A wetlands delineation was conducted in January 2024 to establish a current CRPA buffer location.

- **Proposed Condition:**

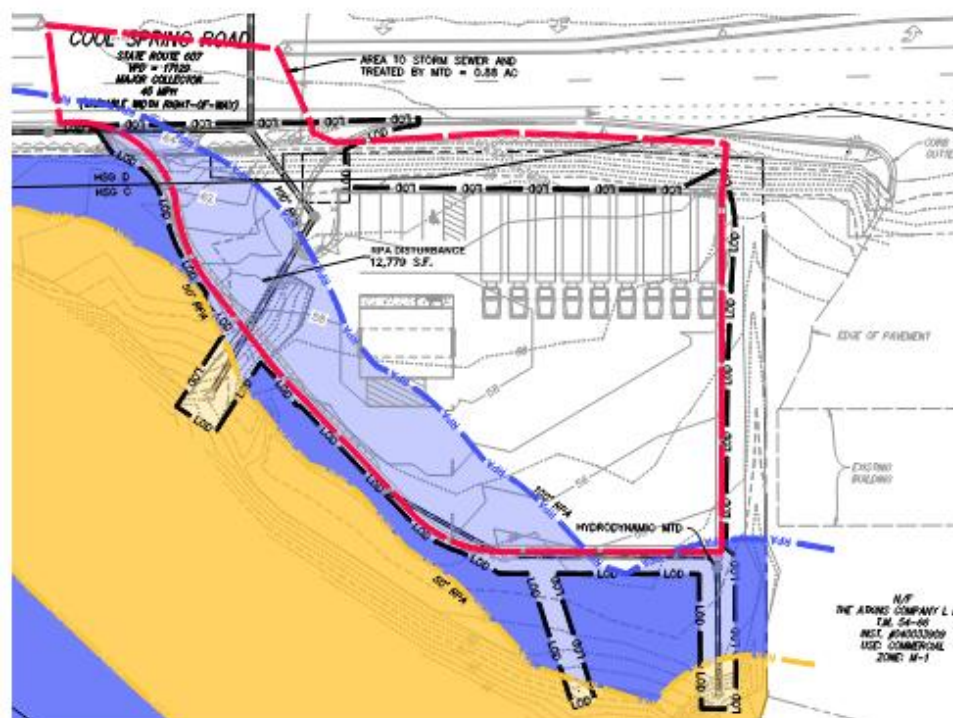
The applicant requests permission to construct a tractor trailer repair and maintenance building with associated entrance, drive aisle, parking lot, and utilities; special exception application #24155970. A major site plan (AP24155505) has been submitted to the Department of Planning and Zoning for review and approval. The plan proposes to impact the landward and seaward 50 feet of the Chesapeake Bay Resource Protection Area buffer (CRPA) with a portion of the building, the property entrance, and a drive aisle to access the building with tractor trailers. The proposed work will impact 12,779 sq. ft. (0.293-acre) of CRPA on site. The landward 50 ft. of the CRPA will incur 11,784 sq. ft. (0.27-acre) of impacts; 9,569 (0.22-acre) of which will be permanent, and 2,215 sq. ft. (0.05-acre) will be temporarily impacted. The seaward 50 ft. of the CRPA will incur 995 sq. ft. (0.023-acre) of which 370 sq. ft. (0.008-acre) will be permanent, and 625 sq. ft. (0.014-acre) will be temporarily impacted.

- Mr. Victor Mbulu is requesting the Board consider the mitigation described above as compensation for the loss of 0.24 acre (10,309 sq. ft. – (9,569 sq. ft. + 370 sq. ft.)) of CRPA and approve his request.

Tax Map Location – 54-68B



Proposed Plan



LEGEND

- UNDISTURBED SEAWARD 50' RPA (2.44 AC)
- DISTURBED SEAWARD 50' RPA (395 SF; 0.0228 AC)
- UNDISTURBED LANDWARD 50' RPA (0.39 AC)
- DISTURBED LANDWARD 50' RPA (11,784 SF; 0.2705 AC)
- AREA TO MTD (0.88 AC)



PHOSPHORUS REMOVAL NARRATIVE:

THE PHOSPHORUS REMOVAL REQUIREMENT LISTED IN THE TOP VIEW IS ONLY BASED ON THE AREA OF THE DISTURBANCE WITHIN THE RPA, 0.23 ACRES. THIS IS TO PROVIDE THE WATER QUALITY TREATMENT LOST WITH THIS DEVELOPMENT. THE AREA USED IN THE SECOND VIEW, 0.88 ACRES, IS THE TOTAL AREA ENTERING THE MTD THROUGH THE STORM SEWER SYSTEM. THIS AREA INCLUDES THE MAJORITY OF THE SITE AND SOME OFFSITE AREA. WHEN THIS AREA IS TREATED BY THE HYDRODYNAMIC DEVICE, 0.38 LB/YR OF PHOSPHORUS IS REMOVED FROM THE RUNOFF. THIS AMOUNT EXCEEDS THAT WHICH IS REQUIRED FOR THE DISTURBANCE IN THE RPA BY 0.02LB/YR.

Staff Observations

- A special exception is required for proposed entrance, drive aisle, building location and impact to the seaward 50 ft. of the CRPA.
- The proposed mitigation for the permanent and temporary CRPA impacts is in accordance with Chapter 27B of Stafford County Code, will follow the Riparian Buffers Modification and Mitigation Manual, and will be incorporated into the Major Site Plan requirements for approval.

ATTACHMENT 7

OLD BUSINESS:

CHAIRMAN'S REPORT:

STAFF REPORT: NONE

ADJOURNMENT